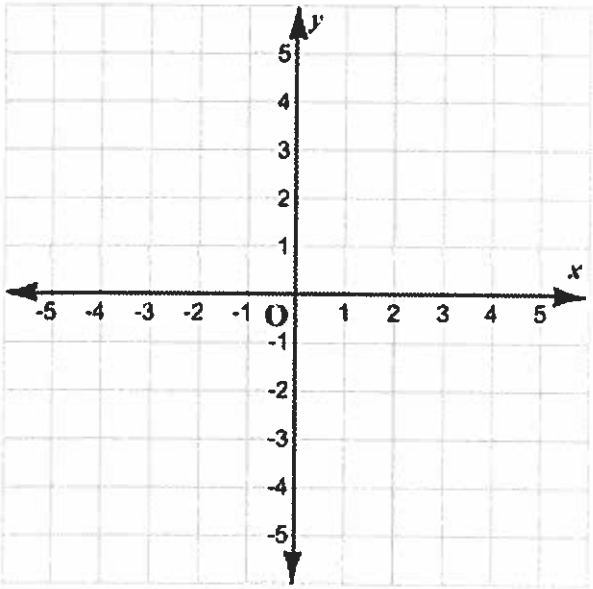
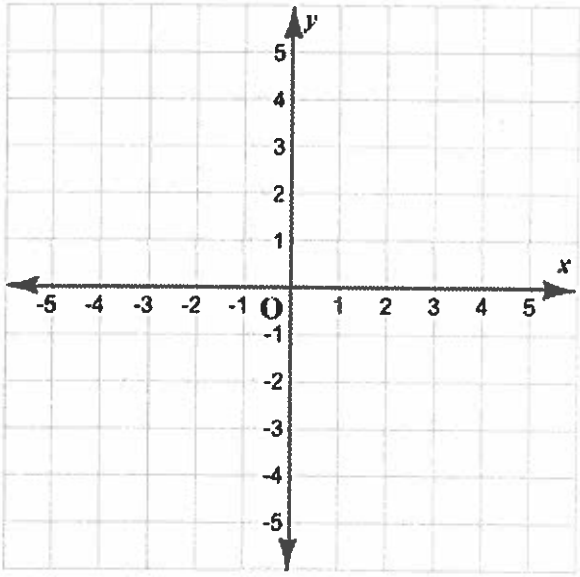
In Class Problems:

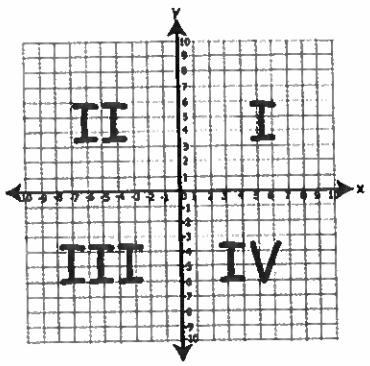
1) Graph and label each point on the coordinate plane. Write which quadrant they are in:

P (-4, 2) _____
Q (3, 2.5) _____
R (-4.5, -5) _____
S (4, -5) _____

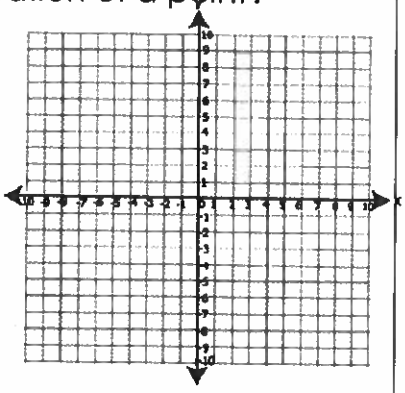


2) Using the grid below, what is the x- coordinate that is 4 units to the right of (-3, -2)?



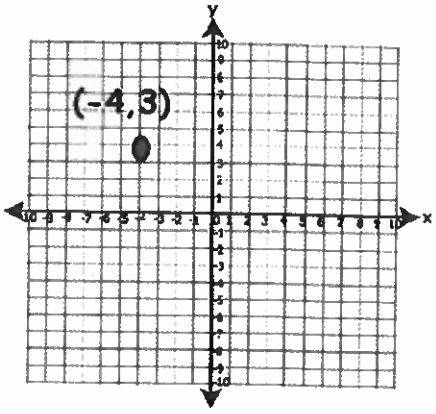
Question	Answer
What is a **coordinate plane**?	Formed by a horizontal axis and a vertical axis and is used to locate points.
What is the **x-axis**?	The horizontal axis on a coordinate plane.
What is the **y-axis**?	The vertical axis on a coordinate plane.
What is the **Origin**?	The zero point; where the x- and y- axis intersect. (0,0)
What is an **Ordered Pair**?	Two points, one for the x-axis and one for the y-axis, used to locate an exact location. (x- axis, y- axis) (5 , 7)
What is a **Quadrant**?	The x- and y-axes divide the coordinate plane into four regions.
What are the **4 Quadrants** of a coordinate plane?	 * Starting in the upper right hand corner, the quadrants are numbered I - IV going COUNTER CLOCKWISE. * We use Roman Numerals to identify each quadrant

How do I identify the exact location of a point?	1.) Go across the x-axis until you reach the line that the point is located; record the number from the x-axis. 2.) Then go up/down the y-axis until you read the line that the point is located, record the number from the y-axis. 3.) You have just found your ordered pair. ** Remember, you must find the x-value first *(**x** comes before **y** in the alphabet)*



More Practice with Coordinate Planes: Plotting Points

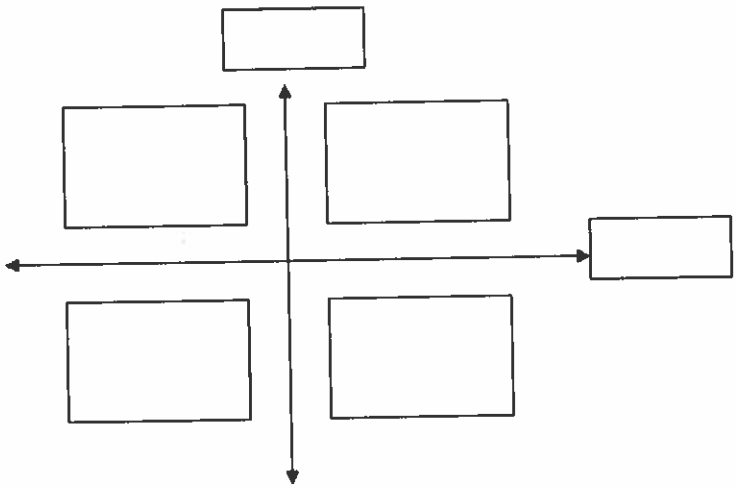
Questions	Answers
How do I plot an ordered pair?	* Using the ordered pair—the first number in an ordered pair is the coordinate for the X axis (horizontal); the second number in an ordered pair is the coordinate for the Y axis (vertical.) **x-axis** **y-axis** Example: (-4, 3) **Remember, x comes before y!
Practice:	Plot and label the following on a coordinate plane: (5,6) (4,10) (0,0) (-4, 8) (-3, -6) (-8, 5) (8, -5) (1, -2) (7, -4) (5, 2)



Name: _____

Unit 6 Video 2 Reflections on the Coordinate Plane

Review: Coordinate Plane



What is a reflection?	
Think:	
Reflect over the y-axis	
Reflect over the x-axis	

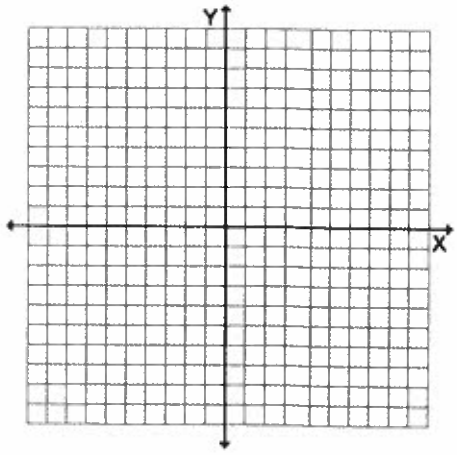
Reflect RSTV over the y-axis: Write new points

R(1, 3) R'_____

S(5, 3) S'_____

T(5, 1) T'_____

V(1, 1) V'_____

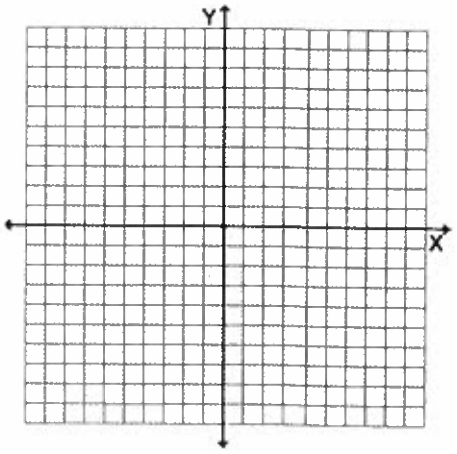


Reflect CAB over the x-axis: Write new points

C(-5, 3) C'_____

A(-2, 1) A'_____

B(-2, 5) B'_____



What if you don't have graph paper handy?

<u>When reflecting over the x-axis</u>	
<u>When reflecting over the y-axis</u>	

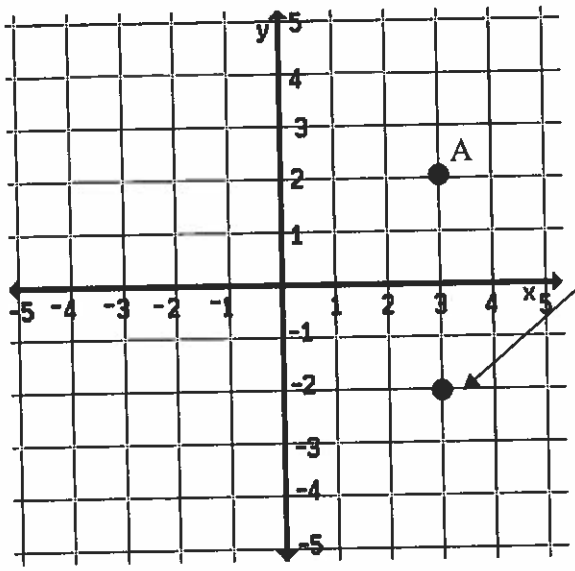
Examples:

1. Reflect over the x-axis:
   W(-1, 2) W'_____
   T(-2, -5) T'_____

2. Reflect over the y-axis:
   A(3, 4) A'_____
   B(1, -1) B'_____

Guided Reflection Notes
Reflecting a point over the *x*- or *y*-axis

Reflecting over the *x*-axis:



Write down the ordered pair for A.
If A is reflected across the x- axis, what would be the new point on the graph? Label this point.

Look at both points, what observations can you make about the two points.

_____

_____

_____

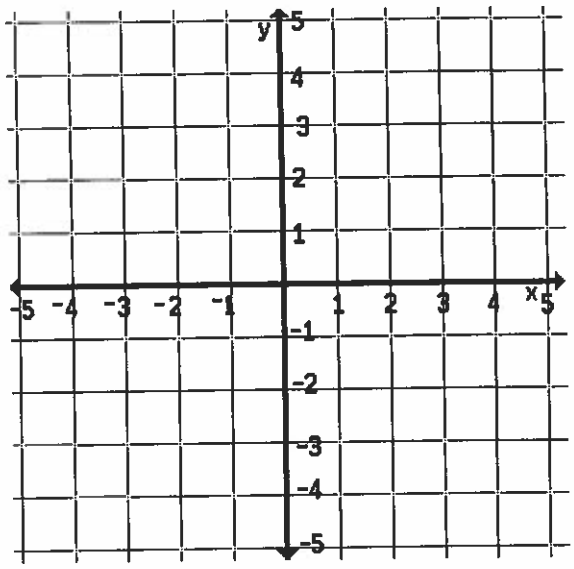
Reflecting over the *x*-axis rule: _____

_____

Try it:

Graph the following points in the correct quadrant of the coordinate plane. If the point is reflected across the *x*-axis, what are the coordinates of the reflected points? What similarities are between coordinates of the original point and reflected point?

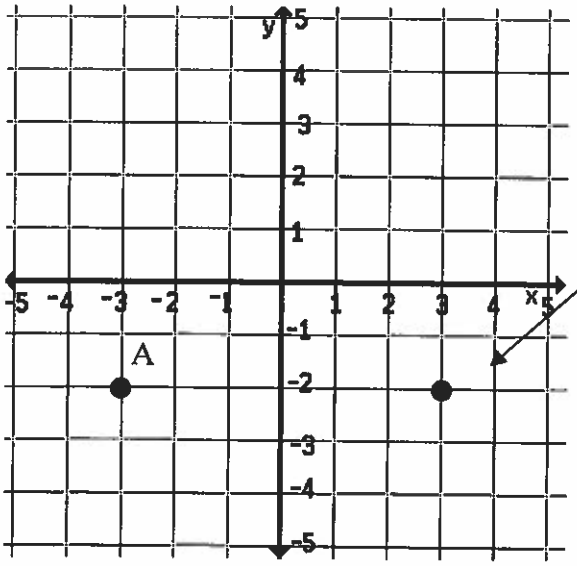
A (-5, 2) ⟶ (,)
B (2, 4) ⟶ (,)
C $(-1\frac{1}{2}, 3)$ ⟶ (,)
D $(-4, -3\frac{1}{2})$ ⟶ (,)



_____

_____

Reflecting over the *y*-axis:



Write down the ordered pair for A.
If A is reflected across the y- axis, what would be the new point on the graph? Label this point.

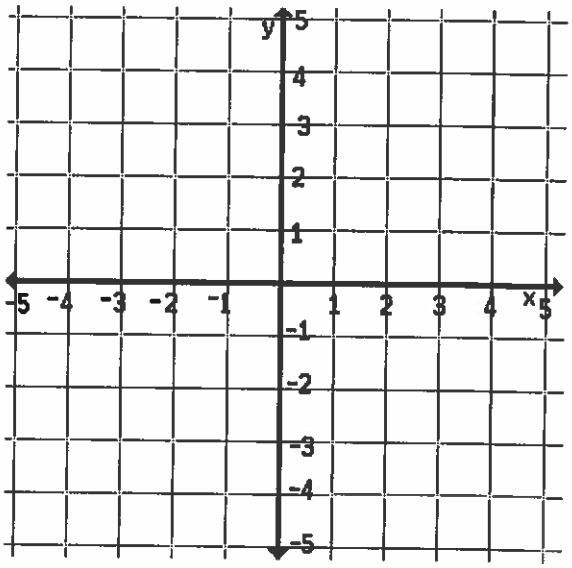
Look at both points, what observations can you make about the two points.

Reflecting over the *y*-axis rule: _____

Try it:

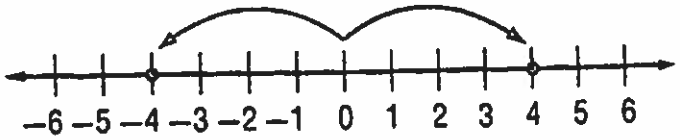
Graph the following points in the correct quadrant of the coordinate plane. If the point is reflected across the *y*-axis, what are the coordinates of the reflected points? What similarities are between coordinates of the original point and reflected point?

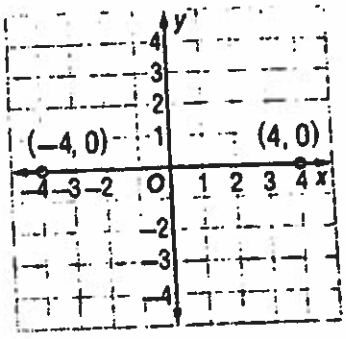
A (-5, 2) ⟶ (,)
B (2, 4) ⟶ (,)
C $(-1\frac{1}{2}, 3)$ ⟶ (,)
D $(-4, -3\frac{1}{2})$ ⟶ (,)



You can use what you know about number lines and opposites to compare locations on the coordinate plane. Consider the number line and coordinate plane below.

The number line shows that -4 and 4 are opposites.





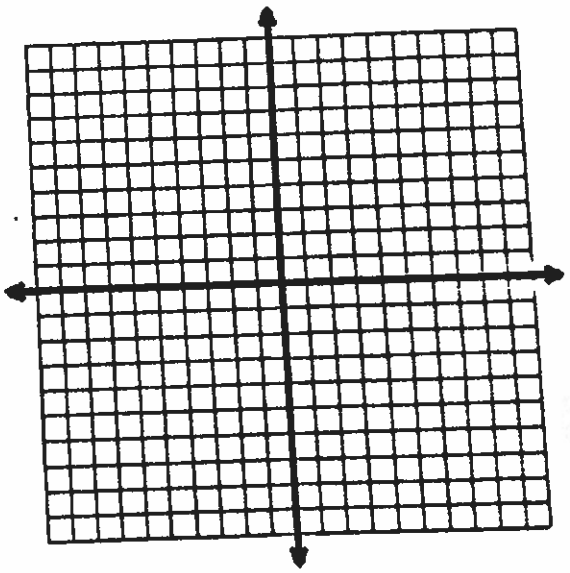
The coordinate plane shows that the points (-4, 0) and (4, 0) are the same distance from the *y*-axis in opposite directions. So, they are *reflected* across the *y*-axis. Notice that the *y*- coordinates did not change and that the *x*-coordinates are opposites.

Name the ordered pair that is a reflection of each point across the *x*-axis.

(1, -4) (-2, 5) (-3, -1)

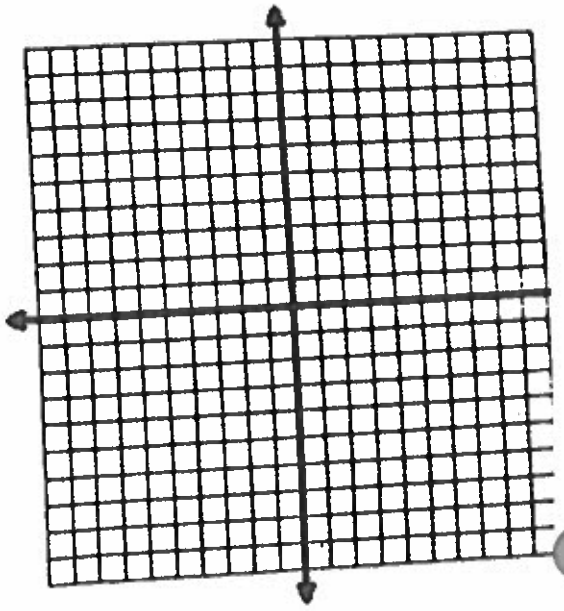
Name the ordered pair that is a reflection of each point across the *y*-axis.

(1, -4) (-2, 5) (-3, -1)



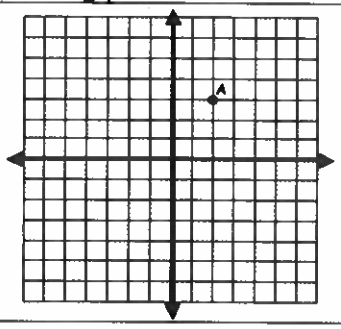
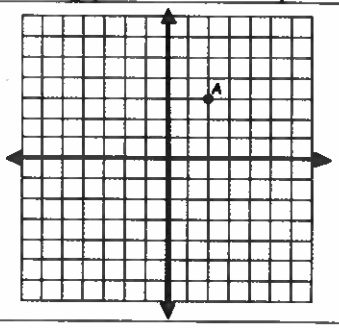
In each column, write the coordinates of the points that are related to the given point by the criteria listed in the first column of the table.

Given Point	(5, 3)	(-2, 4)	(3, -2)	(-1, -5)
Reflected across the *y-axis*				
Reflected across the *x-axis*				
Reflected first across the *y-axis* and then *the x-axis*				
Reflected first across the *x-axis* and then *the y-axis*				



Exit Ticket: Reflections

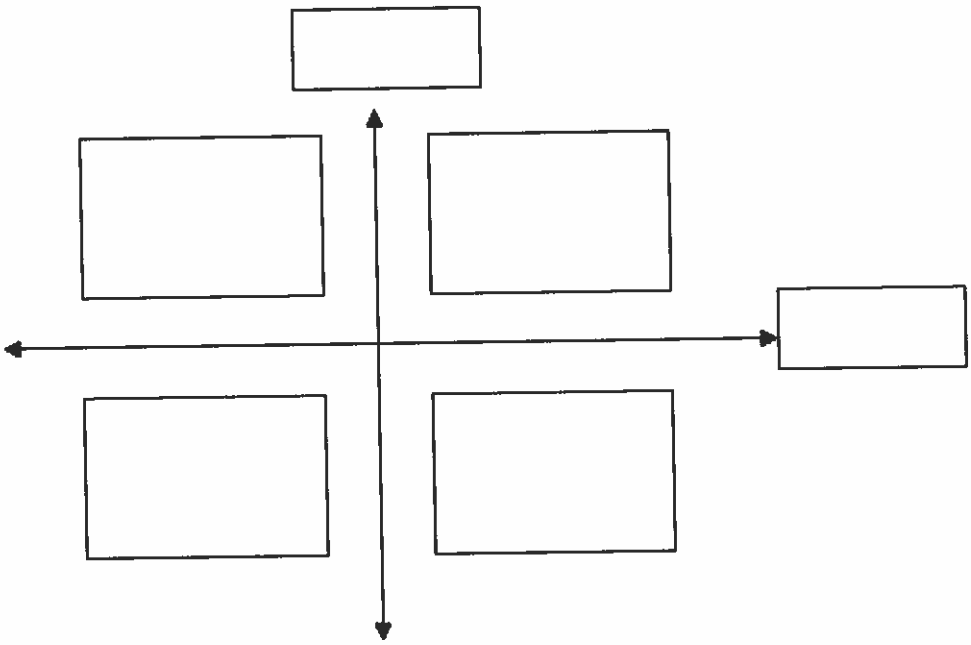
Name:_____

Reflect the following point over the x-axis:	Reflect the following point over the y-axis:
	
Identify whether the point has been reflected over the x or y axis:	
A (-3, 1) → A' (3, 1)	B (6, -5) → B' (6, 5)
How do you know if a point is reflected over the x or y axis?	

Name: _____

Unit 6 Video 3 Coordinate Plane and Distance

Label the coordinate plane:



Plot the following points:

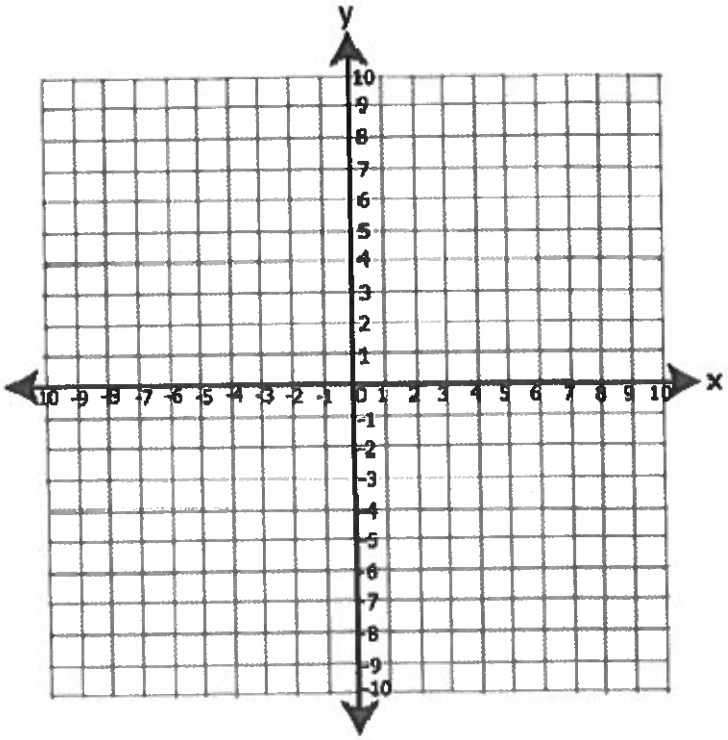
A (5, 7)

B (-4, -3)

C (2, 0)

D (-6, 2)

E (1, -4)



Name the points:

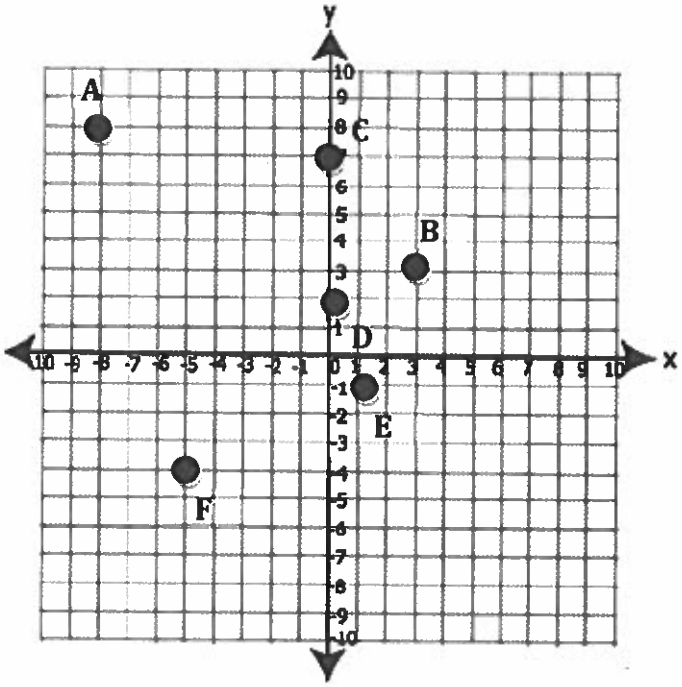
A: _____

B: _____

C: _____

D: _____

E: _____

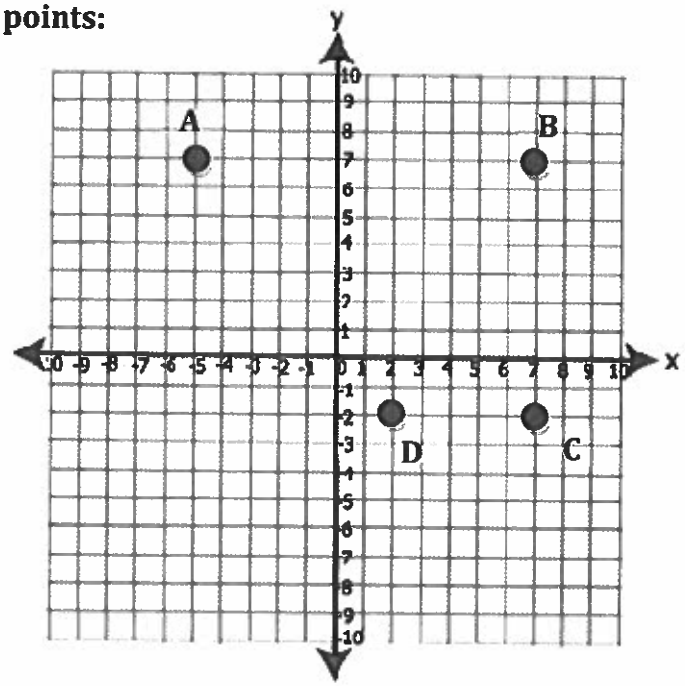


Find the distance between the points:

A to B

B to C

C to D



Find the distance between the points:

- If two points are in different quadrants, add the absolute values of the unlike coordinates: (-3, 1) and (2, 1) = 3 + 2 = 5 units
  - You try: (-3, 4) and (-3, -5) =

- If two points are in the same quadrant, subtract the absolute values of the unlike coordinates: (-3, 3) and (-3, 1) = 3 – 1 = 2 units
  - You try: (2, -7) and (2, -11) =

"I Can Find the Vertical or Horizontal Distance Between two points on the Coordinate Plane."

"I Can Explain how Changing the Sign of the Numbers in an Ordered Pair Causes it to Reflect on One or Both Axes."

Distance Between Points and Reflections on the Coordinate Plane

Four friends are touring on motor cycles. They come to an intersection of two roads: the road they are on continues straight, and the other is perpendicular to it. The sign at the intersection shows the distances to several towns.

What is the distance between Albertsville and Dewey Falls?

What is the distance between Blossville and Cheyenne?

Find the distance between the points listed below.

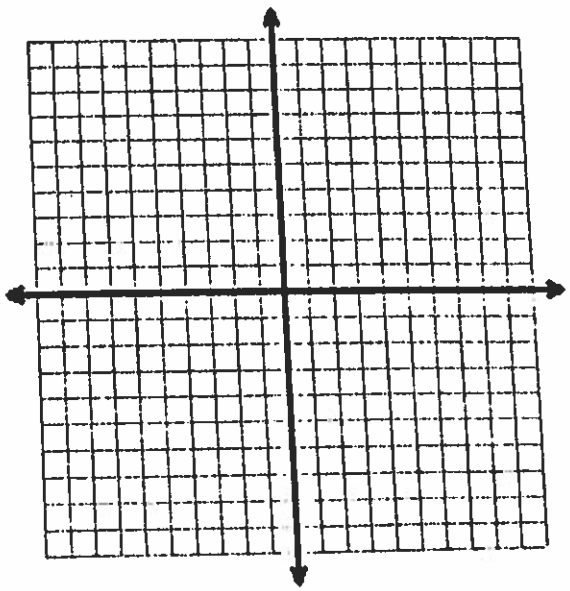
a) (-3, 4) and (-3, 9)

b) (2, -2) and (-8, -2)

c) (-6, -6) and (-6, 1)

d) (-9, 4) and (-4, 4)

e) (0, -10) and (0, 8)



Without graphing, how can you determine the distance between the following sets of points?

f) (32, 7) and (45, 7)

g) (-16, -102) and (-16, 8)

h) (17, -14) and (17, -65)

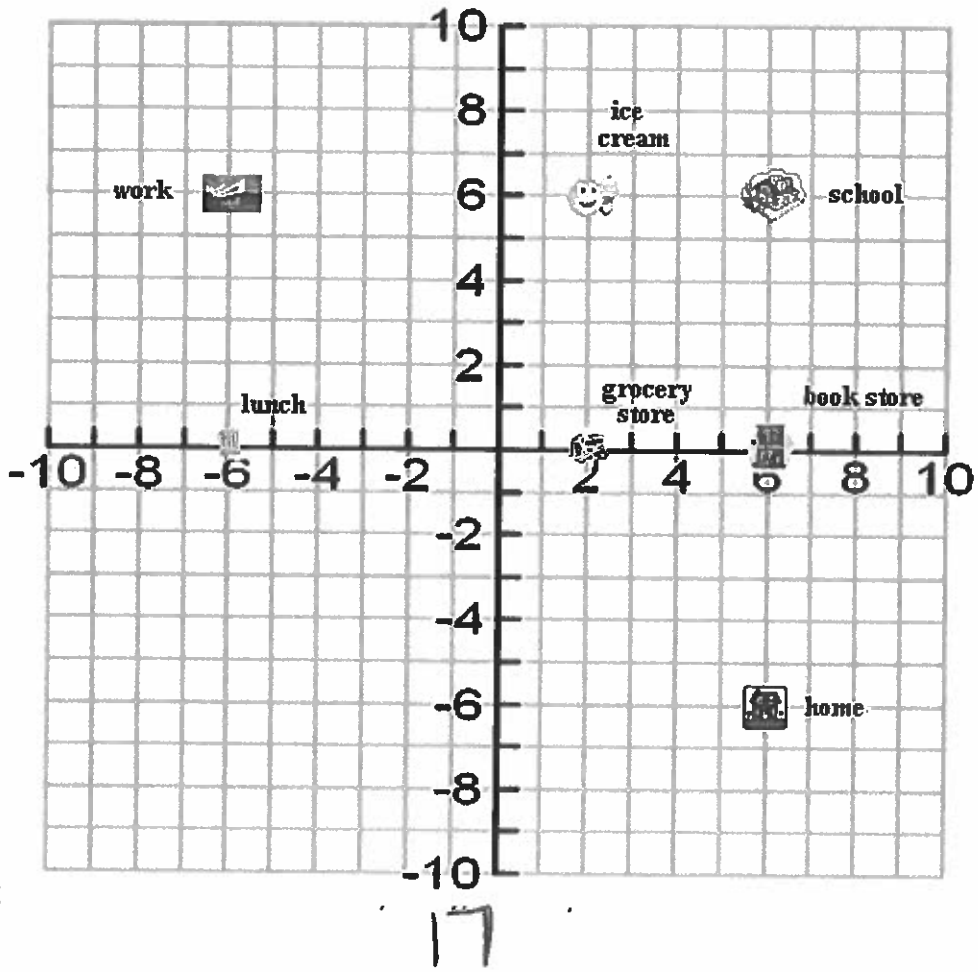
Name: _____ Date: _____

An Exhausting Day

Tammy had an exhausting day. She left the house early one morning and stopped several places throughout the day. Here is her journey.

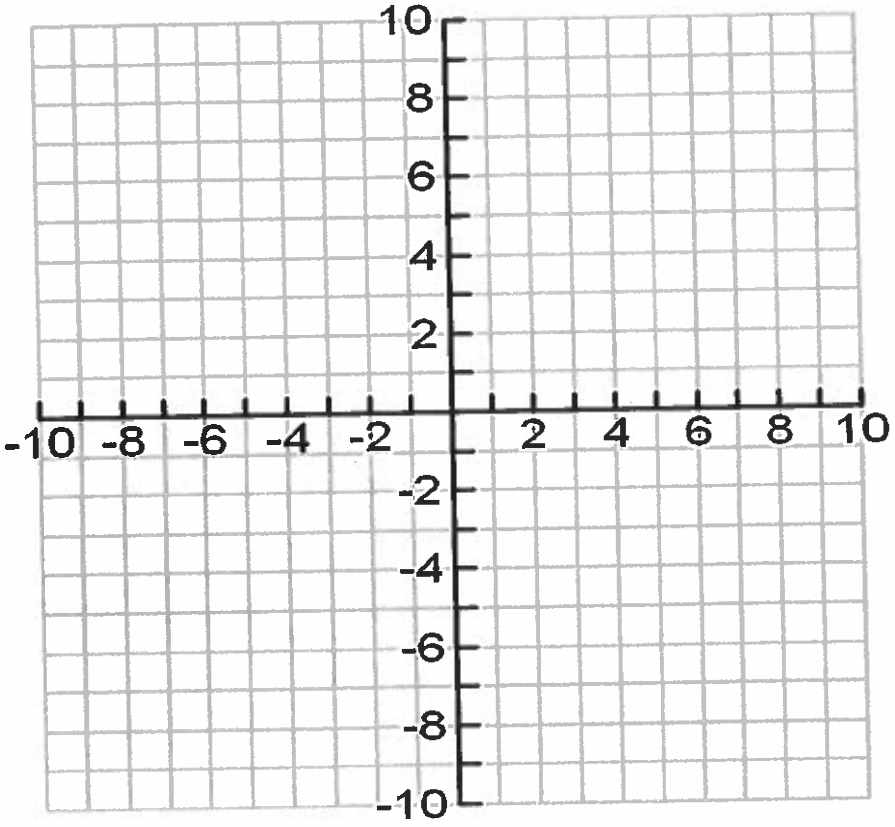
- Started at home
- 1st stop was dropping her child at school
- 2nd stop work
- 3rd she went out to lunch
- 4th went back to work
- 5th picked up her child from school
- 6th took him out for ice cream for a special treat
- 7th stopped at the grocery store to get something for dinner
- 8th stopped at the book store
- 9th went home!
- **Note: the middle of the picture represents the ordered pair; for example the book store is located at (6,0)**

What was her total distance for the day? _____



After you fig

17


10
8
6
4
2
-10 -8 -6 -4 -2
2 4 6 8 10
-2
-4
-6
-8
-10

Name: _____

Homework

Find the distance between the two points.

1. (-4, 3) and (-5, 3)

2. (2, 9) and (2, 5)

3. $(5, -3\frac{1}{2})$ and $(5, 4\frac{1}{4})$

6th Unit 6 - Coordinate Plane
Performance Task 2

Standard(s) Addressed:

6.NS.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include the use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Standards for Mathematical Practice:

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.3 Construct viable arguments and critique the reasoning of others.

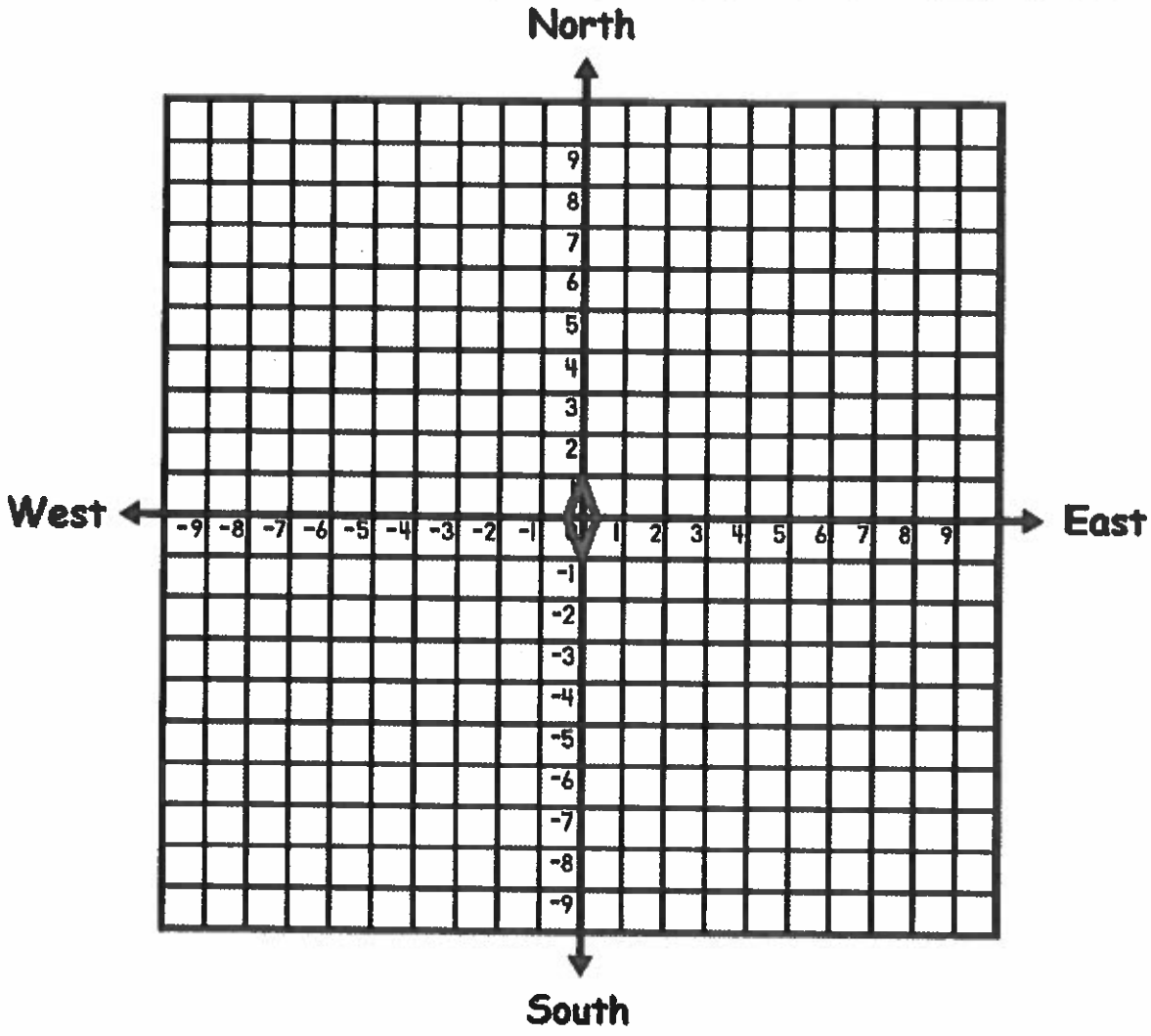
MP.4 Model with mathematics.

MP.6 Attend to precision.

Task:

Below is a city grid of Washington, DC with The Washington Monument in the center of the city. Plot the following locations on the city grid in relation to the Washington Monument and record their coordinate points next to each letter below:

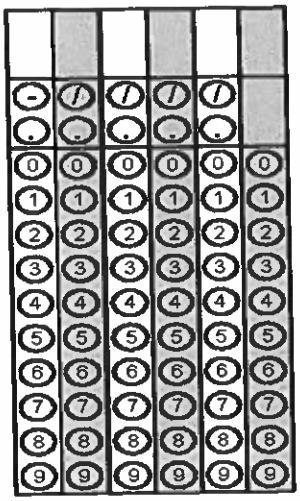
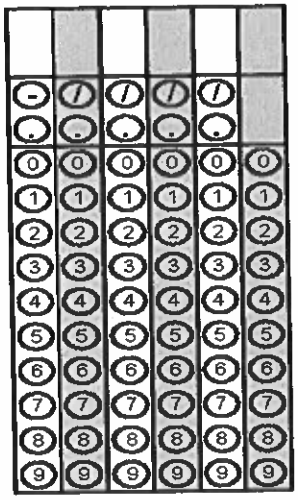
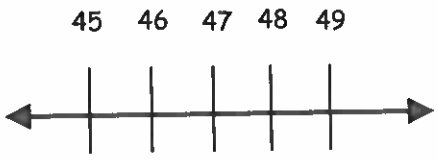
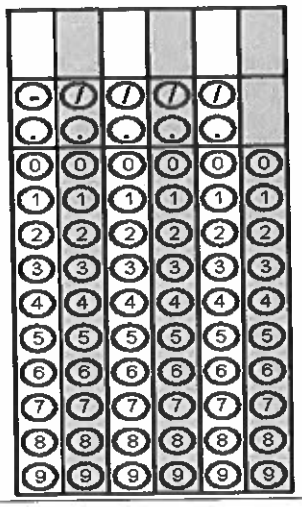
A. State Capitol Building - 8 blocks east and 3 blocks south
B. Lincoln Memorial - 8 blocks west and 3 blocks south
C. Smithsonian Institution - 4 blocks east and 2 blocks south
D. White House - 5 blocks north
E. Jefferson Memorial - 6 blocks south
F. Martin Luther King, Jr. Memorial - 6 blocks west and 2 blocks south
G. Museum of Natural History - 4 blocks east and 3 blocks north
H. Vietnam Veterans Memorial - 7 blocks west and 1.5 blocks north

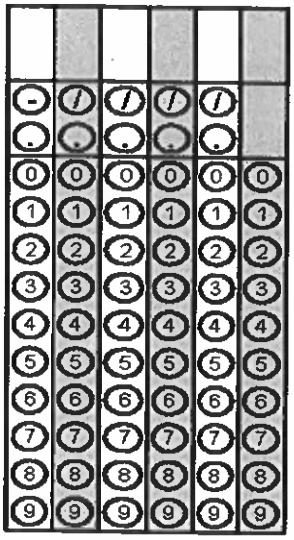
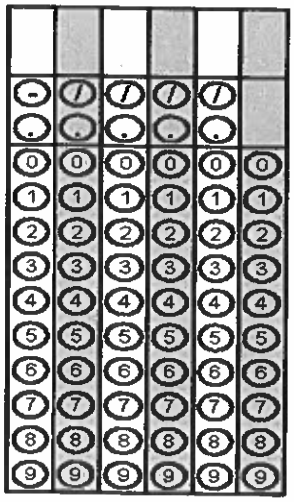


Based on the locations you plotted, determine if the following statements are true or false. If they are false, explain why and rewrite the statement so it will be true.

1. The State Capitol Building and the Lincoln Memorial are the same distance from the Washington Monument, only in opposite directions.
2. The Martin Luther King, Jr. Memorial is further west than the Vietnam Veteran's Memorial.
3. The White House and the Jefferson Memorial are 11 blocks from one another.
4. It would take someone to walk 2 blocks to get from the Martin Luther King, Jr. Memorial to the Smithsonian Institution.

Plan a trip visiting at least 4 of the monuments and determine how many blocks you would have walked on your trip. Remember, you cannot walk diagonally across city blocks, so you may have to ack track to get to your final destinations. List your desired locations and the total distance walked below:

	Problem 1	Problem 2	Gridded Response
Monday	At the beginning of the month, Keyon's credit card balance was $121.32. To help lower his balance, he paid the credit card company $80 of his debt. Then, he used his credit card to purchase sandals for $32.45 and a sweatshirt for $24.89. After the payment and purchases, what is Keyon's new credit card balance? *Express your answer in dollars and cents.*	If $\frac{1}{3}$ of a pizza feeds $\frac{1}{9}$ of a choir group, how many pizzas are needed to feed the entire choir group?	***Problem 1*** 
Tuesday	Write an expression for the sum of 5 and 9, added to 7 less than 21, the quantity of which is divided by the difference of 9 and 2.	Find the volume of a figure that involves two rectangular prisms. One of the prisms has dimensions of 3 ft, 4 ft, and 5 ft. The other prism has dimensions of 12 ft, 6 ft and 4 ft.	***Problem 2*** 
Wednesday	Simplify using order of operations. $$\frac{(30-12)^3}{1^{12}} - \left(6\frac{2}{7}\right)^0$$	In order for your sister to ride any of the rides at a carnival, she has to be over 45 inches. Write and graph this inequality to represent this situation. 	***Problem 1*** 

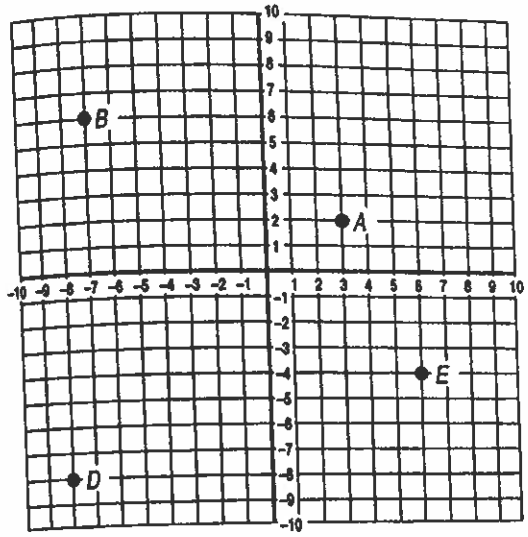
Thursday	Simplify. $\frac{4}{9} \div \frac{3}{18} \times \frac{2}{7} \div \frac{4}{7}$	Consider this expression: $3y + 7x + 5xy + 21$ How many terms does it have? What are the variables? What are the coefficients? What is the constant?	***Problem 1*** 
Friday	Evaluate the expression if $a = \frac{4}{3}$ and $t = 3\frac{1}{4}$. $9a + t + 5\frac{1}{4}$	Combine like terms: $2x + 3x + 8y + 6x + 8 + 7y$	***Problem 1*** 

NAME _____

Lesson 4.5 Using Integers in the Coordinate Plane

Positive and negative coordinates can be graphed using the coordinate plane system.

The first number in an ordered pair represents its point on the *x*-axis. The second number represents the point on the *y*-axis.



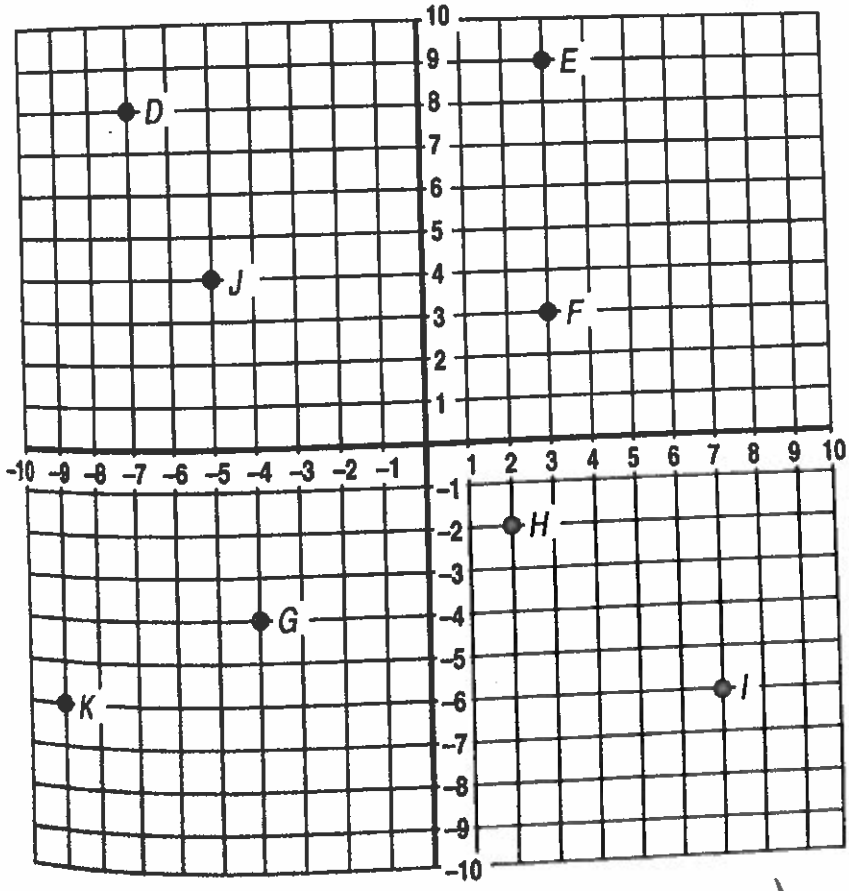
Point *A*: (3, 2)

Point *B*: (–7, 6)

Point *C*: (6, –4)

Point *D*: (–8, –8)

Use the coordinate grid to answer the questions.



Write the ordered pair for each coordinate.

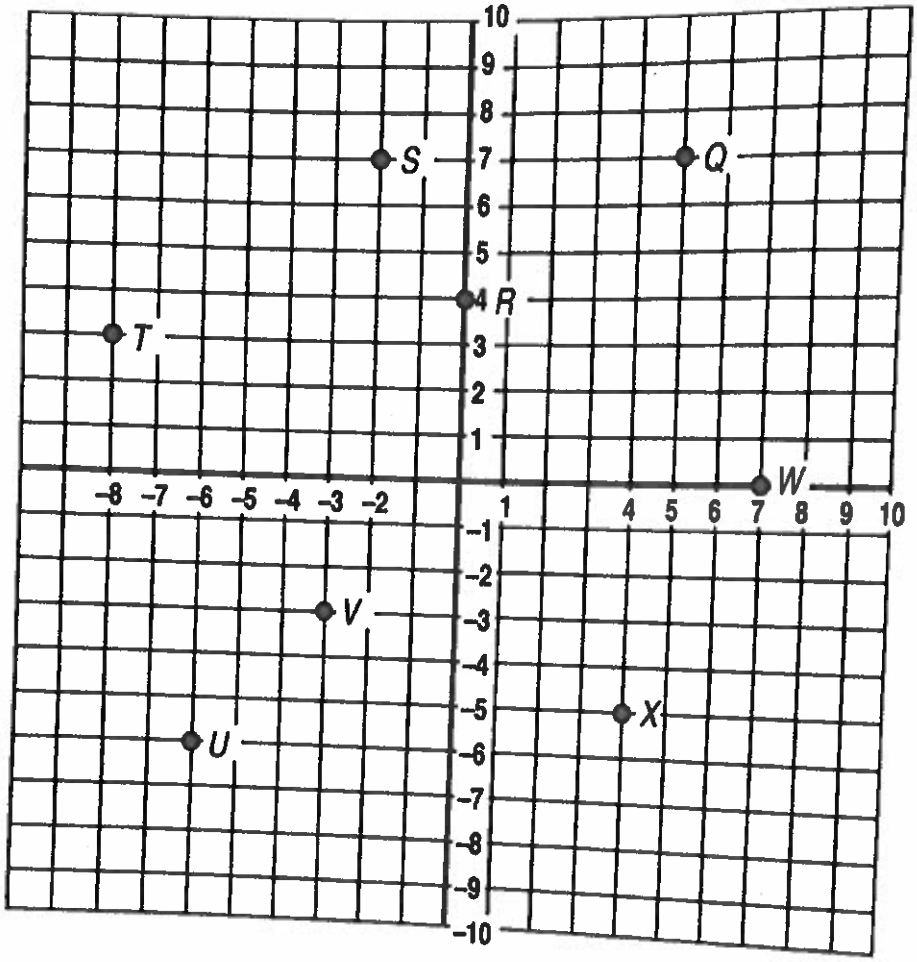
1. *D* _____
2. *E* _____
3. *G* _____
4. *H* _____
5. *K* _____

Name the point located at each ordered pair.

6. (–5, 4) _____
7. (7, –6) _____
8. (–9, –6) _____
9. (3, 3) _____
10. (–7, 8) _____

Lesson 4.5 Using Integers in the Coordinate Plane

Use the coordinate grid to answer the questions.



Write the ordered pair for each coordinate.

1. R _____
2. T _____
3. U _____
4. W _____
5. V _____
6. Q _____
7. S _____
8. X _____

Name the point located at each ordered pair.

9. $(-2, 7)$ _____
10. $(5, 7)$ _____
11. $(-3, -3)$ _____
12. $(4, -5)$ _____
13. $(0, 4)$ _____
14. $(7, 0)$ _____
15. $(-8, 3)$ _____
16. $(-6, -6)$ _____

Exit Task

Name _____ Date_____

André is located at $(-5, 3)$, Boris is located at $(-1, 3)$, and Carlos is located at $(-5, -2)$.

1. Without graphing these ordered pairs, determine the distance between André and Boris. Show your work.

2. Without graphing these ordered pairs, determine the distance between André and Carlos. Show your work.

Unit 9 Video 1

Name _____ Date _____

Ratios and Rates

Ratio: A comparison of two quantities by division. It shows how many times as great one quantity is than another.

Ex 1) There are three ways to write a ratio: 

The ratio of triangles to circles is (Part to Part):

(You must write the ratio in order based on the directions given.) 3:2, 3 to 2, $\frac{3}{2}$

What is the ratio of triangles to the total (part to whole)? Show in all three forms:

_____ , _____ , _____

Ex 2) What does the ratios of 2:5 represent?

Dana's Dozen Muffins
5 corn
4 bran
2 banana nut
1 blueberry

The ratio of _____ *to* _____.

Rate: a comparison for two quantities that have different units (ex: miles per hour)

Ex 3) Petra bikes 3 miles in 8 minutes. At this rate, how long would it take her to bike 6 miles? How long will it take her to bike 12 miles?

Unit Rate: a rate in which the second quantity is one unit. When the first quantity in a unit rate is an amount of money, the unit rate is sometimes called unit price or unit cost.

Ex 4) Gerald pays $90 for 6 yoga classes. What is the cost per class?

Ex 5) Mary lost 36 pounds in 8 weeks. If her weight loss was consistent, how many pounds did Mary lose per week?

Practice Problems

1) a. What is the ratio of stars to moons? Show in all three forms: 

_____ , _____ , _____

b. What is the ratio of total to stars? Show in all three forms:

_____ , _____ , _____

2) What does the ratios of 1:12 represent?

Dana's Dozen Muffins
5 corn
4 bran
2 banana nut
1 blueberry

The ratio of _____ to _____.

3) Martin charges $10 for every 5 bags of leaves he rakes. Last weekend, he raked 25 bags of leaves. How much money did he earn?

4) There are 156 players on 13 teams. How many players are on each team?

5) Lisa walked 24 blocks in 5 hours. How many blocks did she walk per hour?

Find three ratios equivalent to the given ratio.

(Ex: $\frac{32}{12} = \frac{16}{6} = \frac{8}{3} = \frac{80}{30}$ because they all reduce to the same fraction or ratio)

A) $\frac{8}{10}$ _____ B) $\frac{5}{2}$ _____

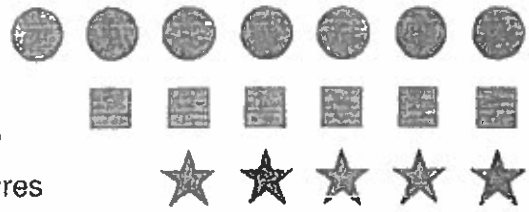
UNIT 9 VOCABULARY

Vocabulary Word	Definition
Double Number Lines	A number line with a scale on top and a different scale on the bottom so that you can organize and compare items that change regularly according to a rule or pattern.
Equivalent ratios	Ratios that name the same comparison
Part-to-Part	A relationship between one part of the whole and another part of the whole
Part-to-Whole	A relationship between one part of the whole and the whole
Ratio	A comparison of two quantities using division
Tape Diagram	A drawing that looks like a segment of tape, used to illustrate number relationships; also known as a strip diagram, bar model, fraction strip, or length model
Unit Rate	A rate in which the second quantity in the comparison is one unit

What Happened When There Was a Kidnapping at Bizarre Middle School?

Write each ratio in simplest form, then find your answer at the bottom of the page. Write the letter of the exercise in the box above the answer.

I. Write each ratio.

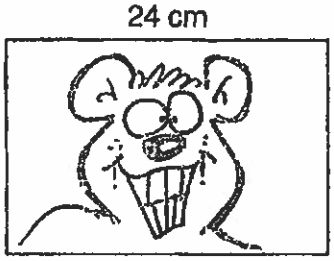


(E) Stars to squares
(H) Squares to circles
(M) Stars to circles
(O) Circles to stars
(T) Stars to all figures
(E) Squares to all figures

II. A TV screen is 15 in. high and 20 in. wide. Write each ratio.

(H) Height to width
(A) Width to height

III. A magazine photograph is 24 cm long and 16 cm wide. Write each ratio.



(E) Length to width
(P) Width to length

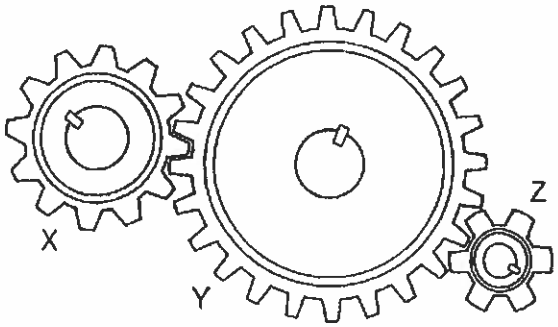
IV. There are 30 students in a class, including 16 boys. Write each ratio.

(H) Girls to boys
(R) Boys to girls
(E) Girls to all students
(I) Boys to all students

V. A fire-breathing swamp monster is 36 feet tall. When last observed, his shadow was 40 feet long. Write each ratio.

(T) Height of monster to length of shadow
(W) Length of shadow to height of monster

VI. Count the number of teeth on each gear. Then write each ratio.



(C) Teeth on Gear X to teeth on Gear Y
(U) Teeth on Gear Y to teeth on Gear Z
(K) Teeth on Gear X to teeth on Gear Z

$\frac{5}{18}$	$\frac{6}{7}$	$\frac{7}{15}$	$\frac{2}{5}$	$\frac{9}{10}$	$\frac{5}{6}$	$\frac{4}{3}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{3}$	$\frac{8}{7}$	$\frac{5}{4}$	$\frac{10}{9}$	$\frac{7}{5}$	$\frac{2}{1}$	$\frac{3}{2}$	$\frac{7}{11}$	$\frac{3}{4}$	$\frac{8}{15}$	$\frac{5}{7}$	$\frac{8}{3}$	$\frac{4}{1}$	$\frac{2}{3}$

Name_____ Date_____

Exit Task

Directions: Read each question carefully and answer in the space provided. Show all work involved.

1. The ratio of girls to boy in a particular class is 3 to 2, because for every ___ girls there are ___ boys.

2. Sandhill Middle School has 894 students in the entire student body. There are 453 students who are girls. What is the ratio of boys to the entire student body, written as a fraction?

3. Steve has 18 blue marbles and 27 red marbles in a bag. What is the ratio of red marbles to blue marbles?

Unit 9 Video 2 Name _____ Date _____

Using Ratios and Rates to Solve Problems

Use the following table to answer the question for EX 1 below:

Pen Colors

Red	1
Green	4
Blue	9
Black	6

EX 1) For every 4 green pens there are 9 blue pens. If there are 24 total green pens, how many blue pens are there?

EX 2) Lucy has a jar of marbles. There are 9 blue marbles and 5 yellow marbles. How many more blue marbles does she need to make the ratio of blue to yellow marbles 3 to 1?

EX 3) Doug is buying pizza for his party. He buys 5 pizza pies for $62.00. How much does 1 pizza pie cost?

EX 4) The bakers at Healthy Bakery can make 220 bagels in 5 hours. How many bagels can they bake in 15 hours?

EX 5) Package A contains 18 pens and sells for $6.84. Package B contains 30 pens and sells for $8.40.

A. What is the unit rate of the package A? _____

B. What is the unit rate of the package B? _____

C. Which package is the best deal based on the unit rate? _____

In class Problems

1) Use the table in Ex 1 to complete the problem. The ratio of blue pens to black pens is 9:6. If there were 36 black pens, how many blue pens would there be?

2) In Ms. Lorraine's Preschool, there are currently 35 preschool students and 4 teachers, how many more students does she need to add to make the ratio of students to teachers to be 11:1.

3) Ron likes to help out his neighbors by mowing lawns, he was paid $79.94 for mowing 7 lawns, how much did he make mowing 1 lawn?

4) A jet travels 580 miles in 5 hours. At this rate, how far could the jet fly in 10 hours? What is the rate of speed of the jet?

5) Caleb went to the grocery store to buy some carrots for a side dish he is making for Thanksgiving. He wants to know which option is the better buy (cheaper per pound).

3-pound bag of carrots for $3.06 or 5-pound bag of carrots for $5.15

Name _____
Date _____

Unit Rates

Color by Number

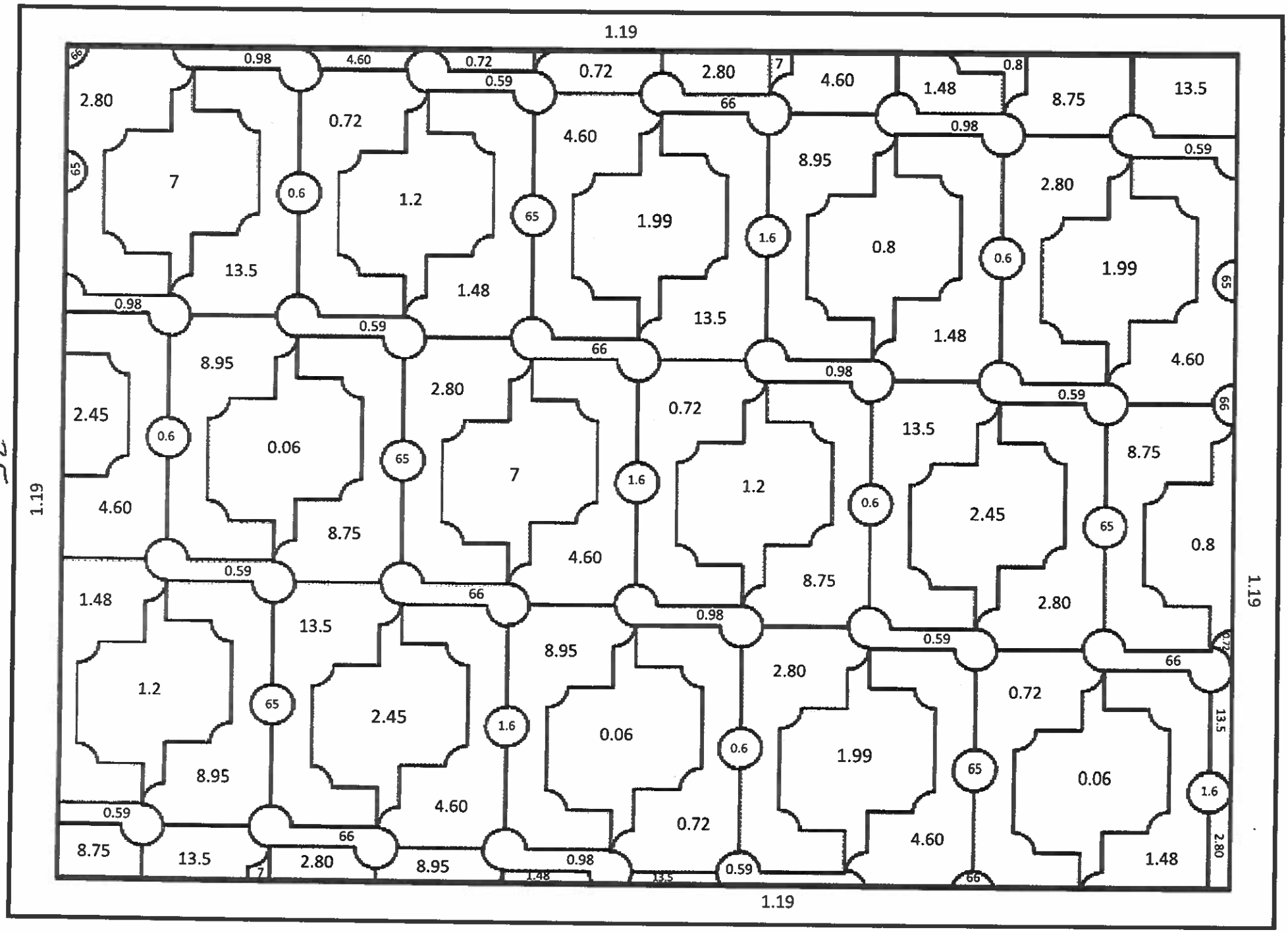
Directions: Solve each problem. Then find the answer on the coloring sheet and color it with the color given for that number. (Units aren't included on the coloring sheet.)

1 Paul runs 4 miles in 28 minutes. If he runs each mile at the same pace, what is his rate per mile? Color this answer pink.	2 5 friends need to split 4 candy bars. How much does each friend get? Color this answer purple.	3 Trail mix costs $5.76 for 8 ounces. What is the cost per ounce? Color this answer blue.	4 If 0.75 pounds of chicken costs $2.10, how much does the chicken cost per pound? Color this answer green.	5 Jamal bought a 2-liter bottle of soda for $1.96. What is the cost per liter? Color this answer yellow.
6 Michelle drove 325 miles in 5 hours. If she traveled at a steady speed, how far did she drive per hour? Color this answer orange.	7 Peter compared dog food prices, to find the better deal. The 25-pound bag cost $30.00, and the 15-pound bag cost $17.85. Which is the better deal? Find that unit price on the coloring sheet. Color this answer dark blue.	8 There are 6 cups of sugar in 5 batches of cookies. How many cups are in 1 batch? Color this answer purple.	9 Jelitza bought 4 lbs of apples for $7.96. What was the cost per pound? Color this answer pink.	10 Which is the better deal: $2.98 for 2 liters of soda or $7.40 for 5 liters? Find the unit price of the better deal on the coloring sheet. Color this answer blue.
11 Aisha walked 5 miles in 67.5 minutes. If she walked at a steady rate, what was her rate per mile? Color this answer green.	12 5 friends are sharing 8 pieces of pizza equally. How many pieces will each friend get to eat? Color this answer orange.	13 Mark bought 4 pounds of bananas for $2.36 this week. Last week he paid $1.83 for 3 pounds of bananas. Which was the lower unit price? Find that unit price on the coloring sheet. Color this answer yellow.	14 Diego purchased 7 equally-priced DVDs for a total of $62.65. What was the cost per DVD? Color this answer blue.	15 Moira compared the prices of orange juice. The 96-ounce container cost $5.76, and the 64-ounce container cost $4.16. Which was the better deal? Find that unit price on the coloring sheet. Color this answer purple.
16 Find the unit price for each item. $\frac{\$14.70}{6 \text{ pounds}}$ or $\frac{\$12.45}{5 \text{ pounds}}$ Find the unit price of the better deal on the coloring sheet. Color t[illegible]nswer pink.	17 Ali earns $78.75 in 9 hours and Carlo earns $93.50 in 11 hours. Who earns more per hour? Find the **higher** earning rate on the coloring sheet. Color this answer blue.	18 In 5 batches of trail mix, there are 3 cups of chocolate chips. How many cups of chocolate chips are in 1 batch? Color this c[illegible]er orange.	19 If 0.8 pounds of beef costs $3.68, how much does the beef cost per pound? Color this answer green.	20 Dante drove 594 miles in 9 hours. If he traveled at a steady speed, how far did he drive per hour? Color this answ[illegible]llow.

3 of 4

Uni ates

Color by Number



Name: _____ Date: _____ Score: _____ #: ____

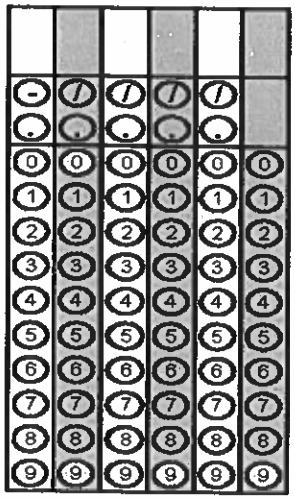
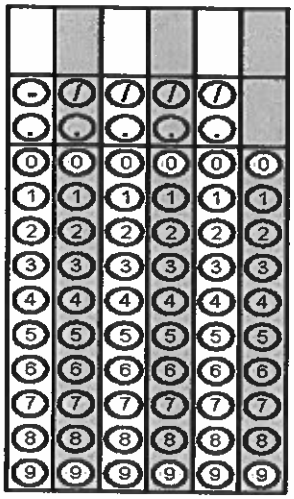
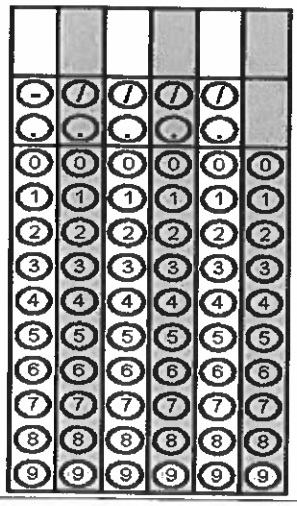
Ratios, Equivalent Ratios & Unit Rates

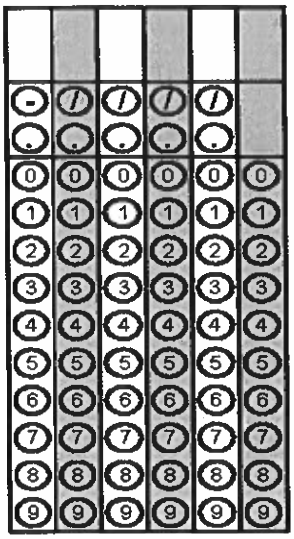
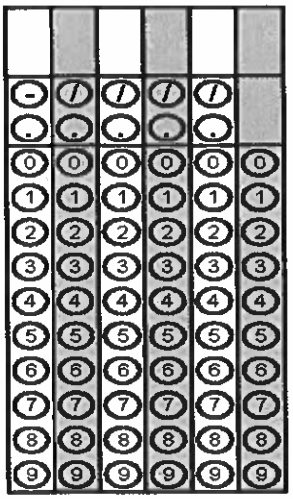
Don't forget to show your work!! ☺ Staple your work to this page.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20

36

36

	Problem 1	Problem 2	Gridded Response
Monday	Evaluate. $\left(\frac{3}{7}\right)^3$	Aidan and Maria's parents bought them a pizza to share. Aidan ate $\frac{1}{2}$ of the pizza and Maria ate $\frac{1}{3}$ of what was left. Their mom divided the rest between her and their dad for lunch the next day. How much of the pizza did their mom and dad take for lunch?	***Problem 2*** 
Tuesday	How many $\frac{2}{3}$ are there in 10?	Evaluate $4y^2 + 3y + 2xy - 5$ if $x = 3$ and $y = 2$?	***Problem 1*** 
Wednesday	Beth is building a model of her dream home with centimeter cubes. She knows the model should have a volume of 520 cubic centimeters and that the area of the base is 25 square centimeters, but she is unsure about the height. What is the height needed to create her model?	Combine like terms. $5k + 2m + 9k + 12 + 3m + 3$	***Problem 1*** 

Thursday	Round to the nearest tenth. 6.352 10.10999 7.21 0.49	Olivia is making apple cider. Her recipe calls for $1\frac{1}{2}$ cups of sugar per pitcher. How many cups of sugar will she need to make 20 pitchers?	***Problem 2*** 
Friday	James is running the 800 meter race. How many centimeters will he run?	What is the value of $2y^2 + 2y + 2xy - 1$ if $x = 3$ and $y = 2$?	***Problem 2*** 

Name: _____ Date: _____ Period: _____

REAL WORLD STATIONS

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	12.

Unit Rates

1. Penelope's dad has to commute to work. How many miles does he drive each day if he drives a total of 370 miles for 5 days?

2. Bert, Michelle, Caroline, Theo and Max Richards went to the movies. Mrs. Richards had a coupon for $8 off their total. If they paid $22 with the coupon, what was the original ticket price per person?

3. Mama John's Pizza is having a special. Families can order three large pizzas for $39.45. What is the unit price for one pizza?

4. At the movie theater, Leon can buy 4 large popcorns or 2 large popcorns and 3 candy bars for the same price. If the candy bars cost $6 each, how much is one large popcorn?

5. Katia can run 3 miles in 27 minutes. At this rate, how long will it take her to run one mile?

6. To get to the beach, the Madrid family drove 530 miles over a period of nine hours. About how many miles did they drive each hour?

7. Milo's Club has a pack of 35 toy cars for $87.50. CJ's Club sells the same toy cars in a pack of 40 for $98. Which store offers the best price per car?

8. The Great American Muffin Company sells a dozen muffins for $7.20. What is the unit rate for a muffin?

Created by E. Nash

Name:_____ Period:_____

Module 6 Review: Rotations Answer Sheet

Questions will be posted online if you need to review further. **SHOW ALL WORK** in spaces provided.

Station #1:

1.	2.	3.	4.	5.
_____more red	_____more red	_____more small	_____more students	_____more silver

Station #2:

1. **a.**_____ **b.**_____ **c.**_____	**2.** **a.** _____ **b.**_____ **c.**_____	**3. Put all answers in box that apply**
4. **a.**_____ **b.**_____ **c.**_____ **to** _____ **d.**_____ **to** _____	**5. Put all answers in box that apply**	**** Extra Problems**** 1. **Find the ratio of boys to girls in this classroom right now:**_____ 2. **Find the ratio of students to adults in this room right now:**_____ 3. **Find the ratio of blondes to brunettes:**_____

Station #3:

1. **_____lawns** **Rate:_____**	**2.** **_____minutes**	**3.** **$_____**
4. **_____minutes**	**5.** **_____green marbles**	**6.** **_____black cards**

Station #4:

1. $_____per 1 pound of candy	**2.** 2 pound bag unit rate:$_____per _____ 3 pound bag unit rate:$_____per_____ Better deal?_____
3. 3 day pass unit rate:$_____per____ 4 day pass unit rate:$_____per_____ Better deal?_____	**4.** Company A unit rate:$_____per_____ Company B unit rate:$_____per_____ Better Deal?_____

Unit 9 Video 3 Notes Name _____ Date _____

Ratios, Rates, Tables, and Graphs

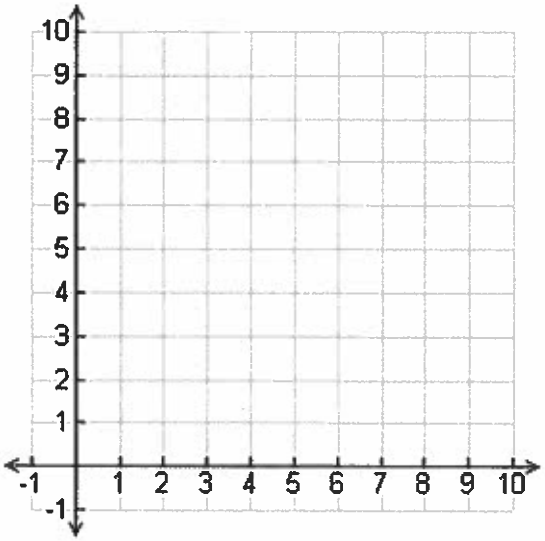
Ex 1) A paint mixture contains a specific blue to green ratio. Complete the table given the ratio.

Blue Paint	Green Paint
3	5
6	
9	
108	

Ex 2) Ashley walks at a speed of 2 miles per hour. The table below shows the distance she has traveled at given times during the trip. Fill in the missing values to complete the table

Time	Distance
0 hours	
	2 miles
4 hours	

Complete the graph based on the table:



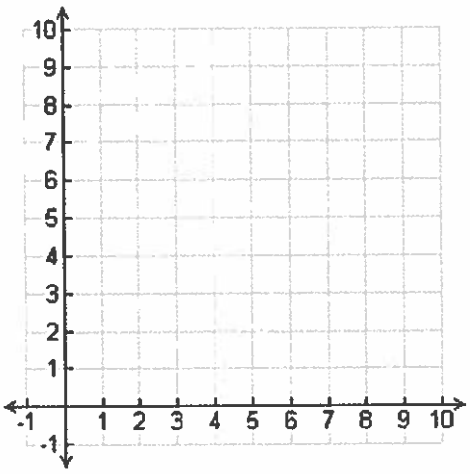
In class Practice Problems

1) A paint mixture contains a specific ratio of yellow to red paint. Complete the table for the given ratio.

Yellow paint	Red paint
2	7
4	
6	
124	

2) Steve jogs at a speed of 3 miles per hour. The table below shows the distance he has traveled at given times during the trip. Fill in the missing values to complete the table and the graph for the following situation.

Time	Distance
0 hours	
	6 miles
3 hours	



Name: _____ Class: _____ Date: _____

Ratio Tables

1. My lemonade has a ratio of 2 lemons to 3 cups of water. If I want to have 20 cups of lemonade, how many lemons do I need?

Lemons	Total
2	5
?	20

Using the ratio table, I can see looking at the whole that 5 * 4 = 20, so to find how many lemons I need I would do 2 * 4 = ____. So I need _____ lemons for 20 cups of lemonade.

2. The SPCA must keep a 2:5 ratio of cats to dogs. If they have 12 cats, how many dogs should they have?

Cats	Dogs
2	5
12	?

Answer: _____

3. The school band needs a 5:4 ratio of flutes to clarinets. If there are 27 students total who play the flute or clarinet, how many play the flute?

Flute	Total

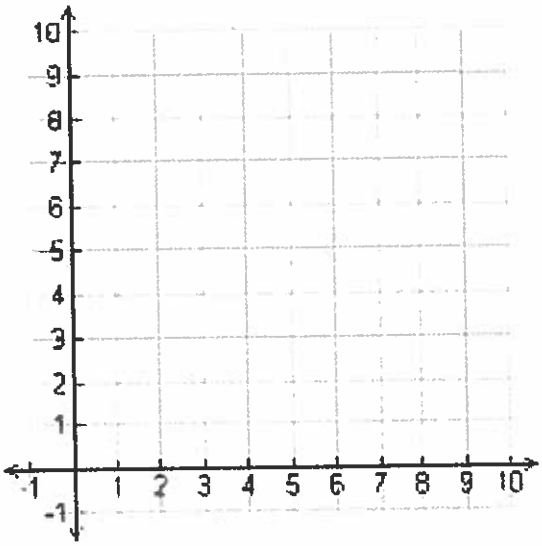
Answer: _____

4. Megan charges $28 for 3 hours of swimming lessons. How much does Megan charge for 2 hours of swimming lessons?

Hours	Cost

Answer: _____

1.



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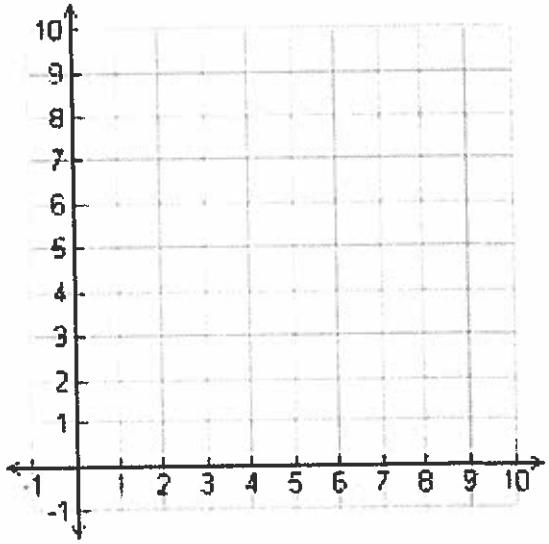
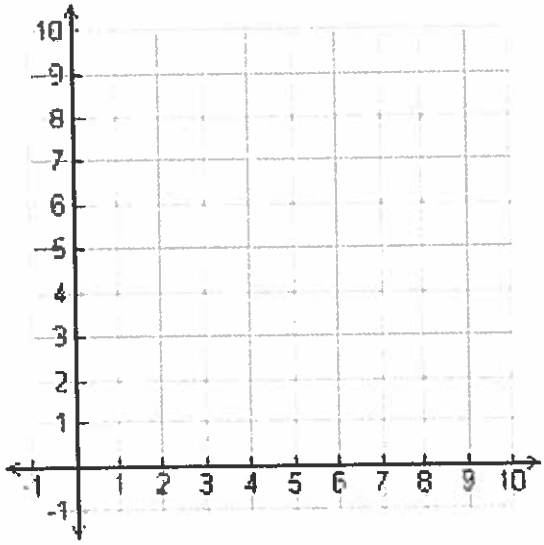
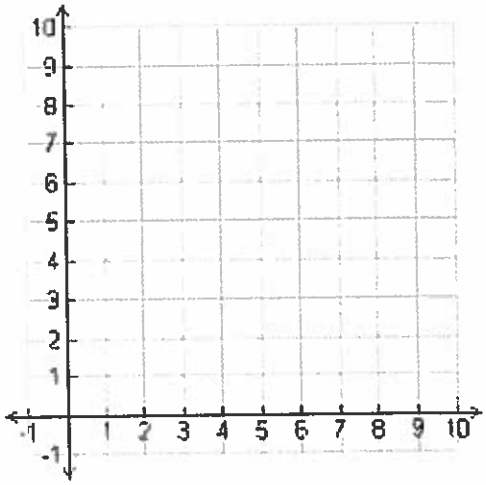


3.



4.



Complete Each Table and Graph

Complete each table and graph

1.

1	3
2	
3	
4	

2.

0	0
2	3
4	
	9

3.

1	2.5
2	
	7.5
	10

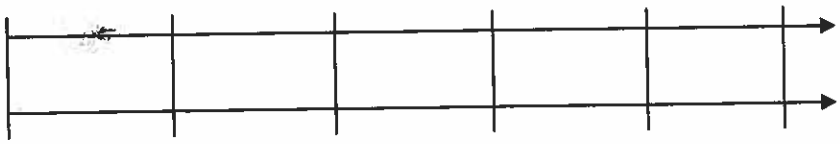
4.

2	1
	1.5
6	
	3.5
10	

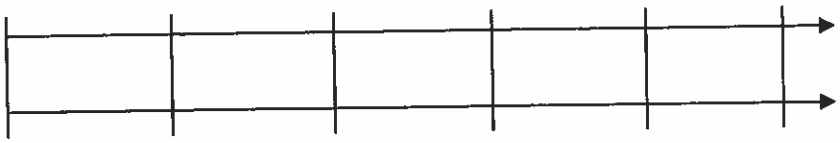
Unit 9 Video 4 Name: _____

Double Number Lines Date: _____ Core: _____

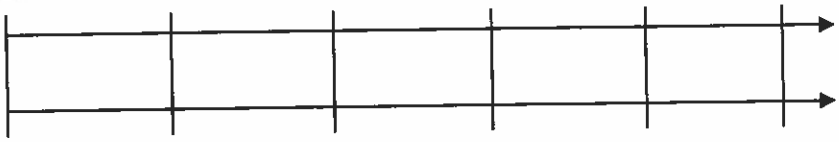
1.) Each egg carton can hold a dozen eggs. If there are 6 cartons, how many eggs are there altogether?



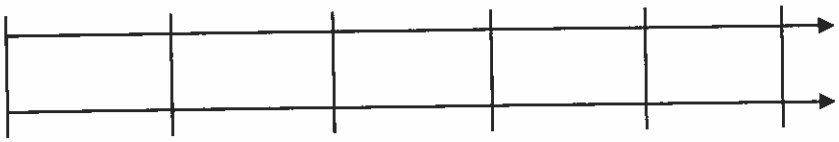
2.) An insect has 6 legs; therefore how many insects would have 30 legs?



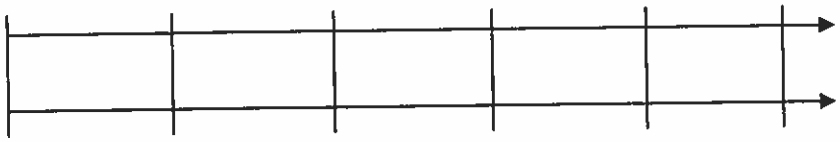
3.) If 1 foot of chain weighs 2.4 pounds, how many feet of chain will weigh 12 pounds?



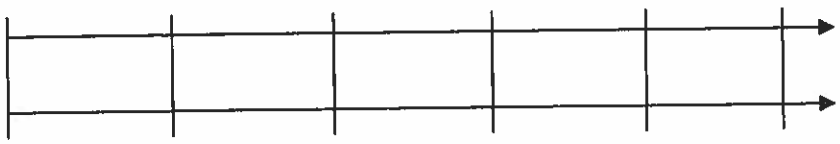
4.) Find 20% of 50
Hint: (Since you are trying to find 20% of 50, then 50 represents 100%.)



5.) Find 75% of 60



6.) Find 51% of 50
Hint: (51% is 50% + 1%.)



DOUBLE NUMBER LINE DIAGRAMS

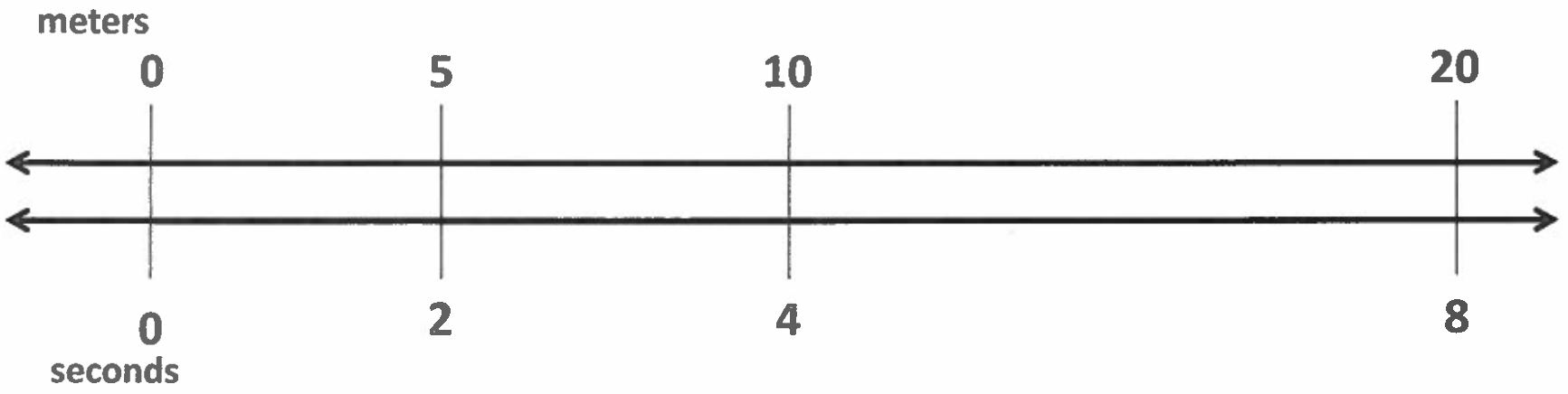
*Double Line Graphs are *best* to use when your units are not the same in your ratio.

For example: 10 meters in 4 seconds

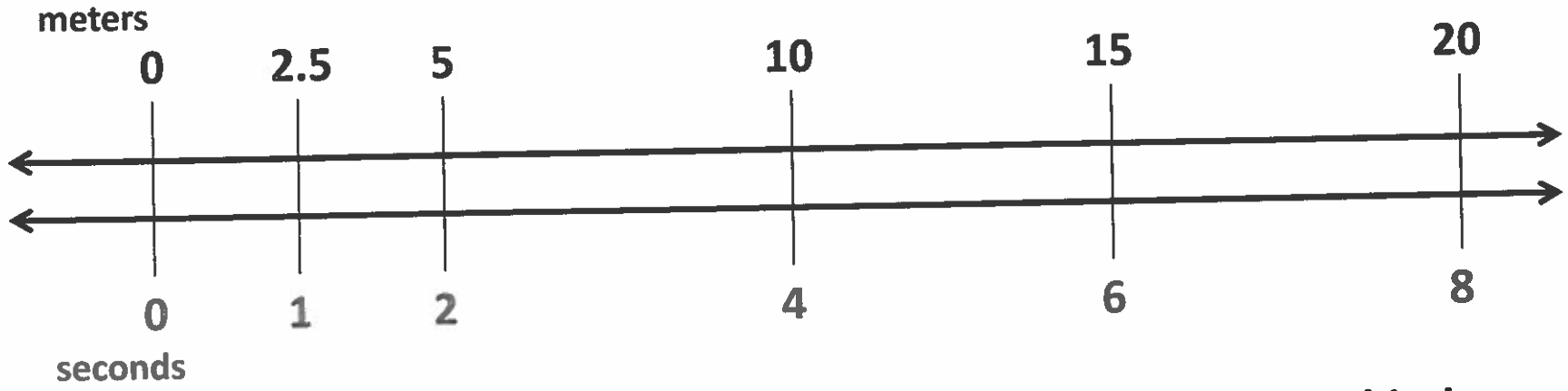
*On a double number line diagram, if the top and bottom numbers are in the same ratio then they are located the same distance from 0 on their respective number lines.

*Once we represent 10 meters in 4 seconds below we can use multiplication and division to find other ratios that are equivalent and represent different forms of the same ratio.

*Now we use the number line relationship to come up with other ratios. An easy one is to split in half or double.



DOUBLE NUMBER LINE DIAGRAMS



*Let's look at some other relationships: Let's take 5 to 2. Knowing this, how could we determine how long it would take to go 15 meters?

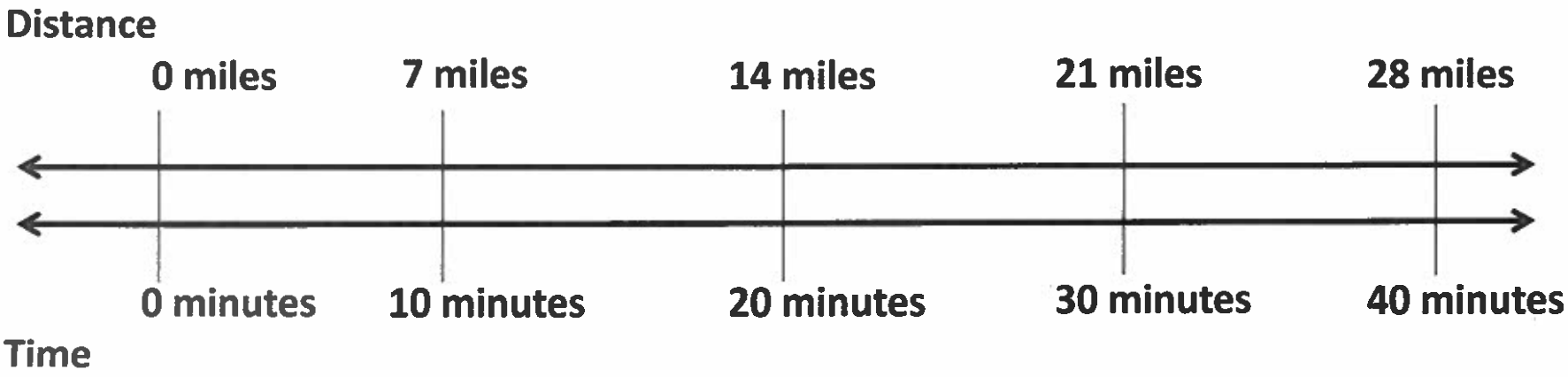
Note that the distances from the respective zeros on each of the number lines is the same.

*To come up with the unit rate, we would look at the bottom unit of seconds. In order to get that to be 1 we would have to divide by two. So if we divide by two on the top and bottom we have our units for the unit rate.

***So using the double line graph we have determined that the unit rate is 2.5 meters per second.**

Double number lines to solve problems

Driving at a constant speed, you drove 14 miles in 20 minutes. On a "double number line", show different distances and times that would give you the same speed. Identify equivalent rates below.



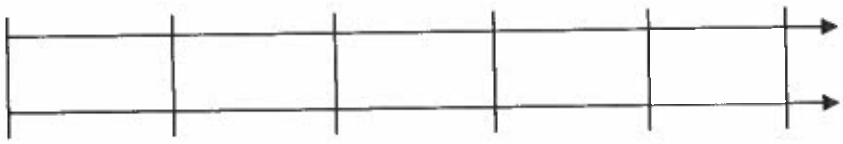
Adapted from commoncoretools.wordpress.com

Name: _____ Class: _____ Date: _____

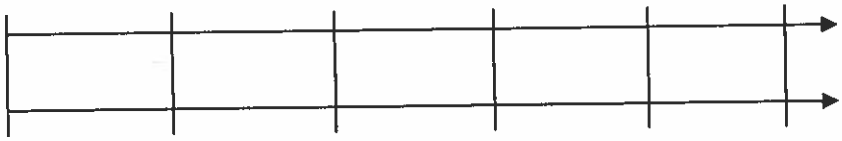
Ratio Practice Problems Using Double Number Lines

Directions: Draw a double number line for each problem to help answer the question (extend the double number line if needed). Be sure to label what each bar represents.

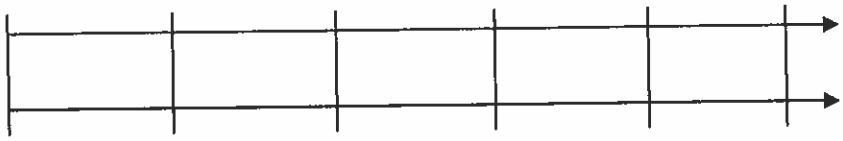
1. There are 4 apples on each plate. If there are 6 plates, how many apples are there altogether?



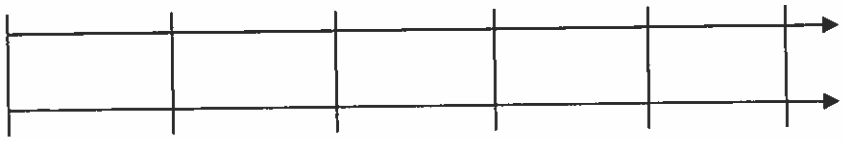
2. 1 meter of wire weighs 6.7 grams. How much will 5 meters of the same wire weigh?



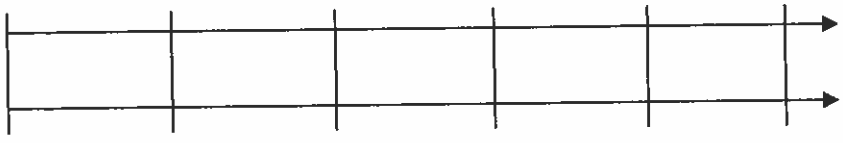
3. There are 24 students in a classroom and 6 large round tables. How many children should be seated at each table if there must be the same number of children at each table?



4. 8 meters of wire length weigh 12 grams. How much will 1 meter of the same wire weigh?



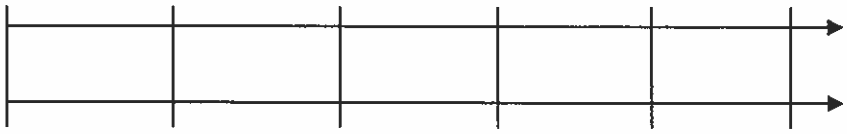
5. There are 30 students in a class. A hexagonal table can seat 6 students. How many hexagonal tables do we need to seat all students?



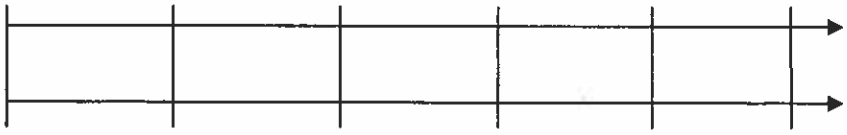
6. 1 foot of wire weighs 5 ½ ounces. How long will the wire be if it weighs 33 ounces?

Created by S. Johnson 2013

7. Paul is building a book case. If each shelf can hold 15 books and there are 5 shelves in the book case, how many books can be placed in the book case?

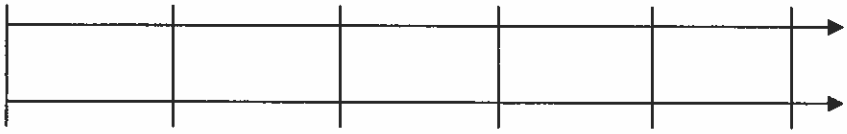


8. Willie has a board that is 32 feet long. If he cuts the board into 4 equal length pieces, how long will each piece be?

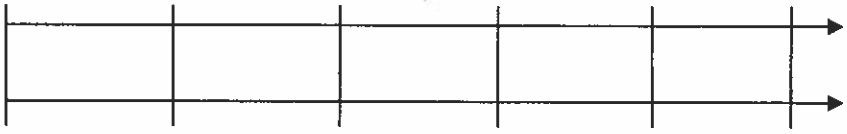


9. Carlos bough 8 packages of gum. If each package has 6 pieces of gum, how many pieces of gum did Carlos buy altogether?

10. Lynn bought 28 chocolate bars. There were in packages of 4. How many packages did Lynn buy?



11. A car can travel 96 miles on 3 gallons of gas. How far can the car travel on 15 gallons of gas?



12. A photocopier can print 12 copies in 48 seconds. At this rate, how many copies can it print in 1 minute?

Unit 9 Video 5 Notes Name: _____

Tape Diagrams Date: _____ Core: _____

Instructions: Create and label a tape diagram to model the relationships between the different amounts and percentages given in each problem.

1.) A sixth grade class collecting traffic data noticed that there were 3 times as many passenger cars as trucks that drove by their school on Main Street between 1:00PM and 2:00PM. The total number of vehicles that passed by the school was 156. How many cars and how many trucks were counted?

Passenger Cars 

Trucks 

2.) Wake County high schools have a ratio of 2 soccer players to every 3 football players. If there are 537 more football players in Wake County, how many soccer players and how many football players are there in Wake County high schools?

3.) In 2013 there were $3\frac{1}{2}$ as many 6th graders in the southern half of Wake County than there were in the north. If the southern half of Wake County had 4,600 more 6th graders, how many 6th graders were in the north and how many in the south?

4.) There were 38,000 middle school students in Wake County last year, which was 20% less than this year's enrollment. Therefore, how many middle school students are enrolled this year in Wake County?

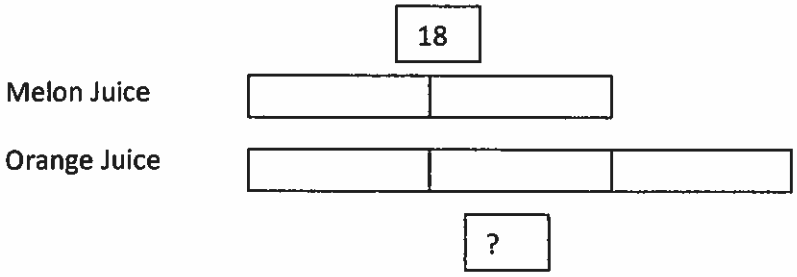
Name: _____ Class: _____ Date: _____

Practice Solving Ratios Using Tape Diagrams

Directions: Draw a tape diagram for each problem to help answer the question. Be sure to label what each represents.

Example:

Emily created a new drink by mixing 2 parts melon juice with 3 parts orange juice. If Emily used 18 ounces of melon juice, how many ounces of orange juice would be needed?



2 bars = 18 ounces, so 1 bar = 9 ounces. Orange juice has 3 bars so 3•9 = 27 ounces

1. For every 5 calendars that Austin sold, Lara sold 4. Austin sold 45 calendars last month. How many calendars did Lara sell?

2. For every 3 cars that Kelly sells, Jane sells 4. Jane sold 32 cars last month. How many cars did Kelly sell?

3. The ratio of boys to girls who participated in the pie-eating contest was 7:2. There were 35 boys. How many girls participated?

4. The ratio of the length of Grace's string to the length of Peter's string is 5:6. Peter's string measures 60 inches. How long is Grace's string?

Created by S. Johnson

5. The ratio of blue marbles to yellow marbles is 5:6. If there are 42 yellow marbles how many blue marbles are there?

6. The ratio of trucks to minivans in the parking lot is 2:5. If there are 14 trucks, how many minivans are there?

7. Noah and Hunter shared some marshmallows in the ratio 3:2. If Hunter had 12 marshmallows, how many marshmallows did Noah have?

8. Megan created a new drink by mixing 2 parts guava juice with 5 parts mango juice. If Megan used 12 ounces of guava juice, how many ounces of mango juice would be needed?

9. Kara and Sam shared a cash prize in the ratio 3:7. If Sam received $77, how much money did Kara receive?

10. The ratio of the length of Mary's wire to the length of Ayman's wire is 5:6. Ayman's wire measures 36 inches. How long is Mary's wire?

Created by S. Johnson

Unit 9 Video 6 Notes Name _____ Date _____

Solving Problems with Proportions

stomary Conversions

1 foot = 12 inches	1 yard = 3 feet	1 mile = 5,280 feet	1 mile = 1,760	1 cup = 8 fluid ounces
1 pint = 2 cups	1 quart = 2 pints	1 gallon = 4 quarts	1 pound = 16 ounces	1 ton = 2,000 pounds

Metric Conversions

1 meter = 100 centimeters	1 meter = 1000 millimeters	1 kilometer = 1000 meters
1 liter = 1000 milliliters	1 gram = 1000 milligams	1 kilogram = 1000 grams

Ex 1) On a map of Florida, 1 inch represents 12 miles in actual distance. What would be the actual distance between Oviedo and Tampa if they are 9 inches apart on the map?

inches	1	
miles	12	

Ex 2) How many grams = 2500 milligrams?

Proportion = _____ Answer = _____

Ex 3) If 3 feet = 36 inches, how many inches will 16.5 feet be?

Proportion = _____ Answer = _____

In Class Practice Problems

1) Nadeville and Henningsburg are 10 miles apart. On a map, the two cities are 2 inches apart. How many miles does 1 inch represent on the map? Fill in the table below to answer the question.

inches		
miles		

2) How many milliliters = 0.3 liters?

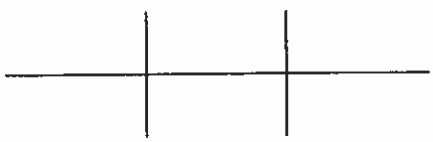
Proportion = _____ Answer = _____

3) A car traveling at a certain speed will travel 90 feet per second. How many feet will the car travel in 90 seconds?

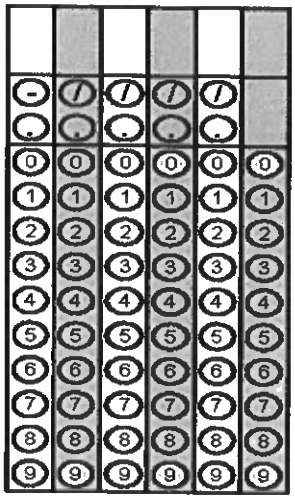
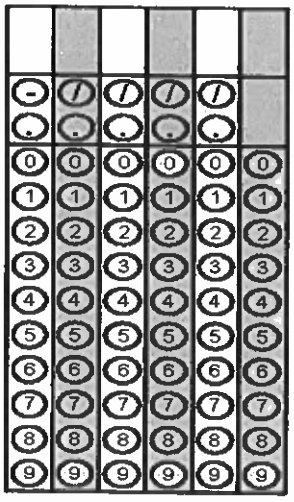
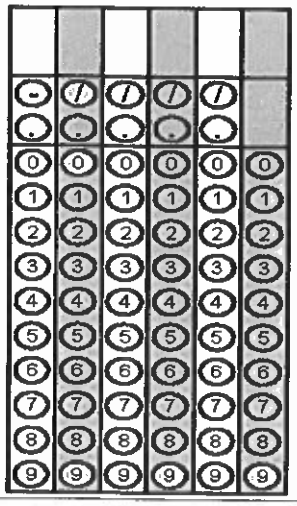
feet		
second		

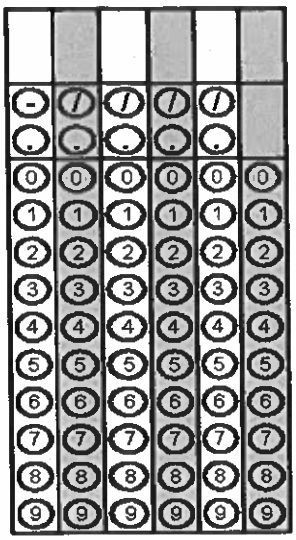
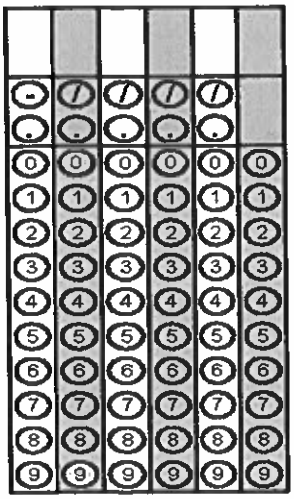
Proportion = _____ Answer = _____

4) Sandy mixed 8 ounces of blue paint, 16 ounces of yellow paint, and 24 ounces of red paint together in a bucket. How many total **cups** did Sandy mix in the bucket?



Total amount of cups = _____

	Problem 1	Problem 2	Gridded Response
Monday	Wilson makes bags to sell for charity using recycled furniture fabric. Last year he created 672 bags. Twenty-seven of the bags were directly donated to a women's shelter. The remaining bags were shared evenly between 15 homeless shelters. How many bags did each shelter receive?	Evaluate. $\frac{34^0}{78^0}$	***Problem 2*** 
Tuesday	Evaluate $7x + 4y$ if $x = 2.6$ and $y = 1.3$.	Solve for y. $3y = \frac{3}{8}$	***Problem 2*** 
Wednesday	A cereal distributer is packing crates for shipment. They pack the same number of boxes of cereal in each crate. They packed a total of 210 boxes of cereal into 14 crates. They still have 105 boxes of cereal that must be packed. How many more crates must they pack?	Use the distributive property to write an equivalent expression for $\frac{1}{3}(6x + 9y + 18)$.	***Problem 1*** 

Thursday	Which is greater? $8 \times \frac{3}{4}$ or $8 \div \frac{3}{4}$	Jabrill divided a number by 10. His calculator had the answer 19.86 showing. What was the original number?	***Problem 2*** 
Friday	What is the length of a rectangular prism whose volume is 1,404 m^3, width is 13 m, and height is 18 m?	Which is greater? 0.75 $\frac{7}{10}$ 74.1%	***Problem 1*** 

Unit 9 Video 7 Name: _____

CCM6 Converting Customary Measurements

Common Customary Conversions:

Fill in the table:

Length	Volume
Weight	

Complete the unit conversions:

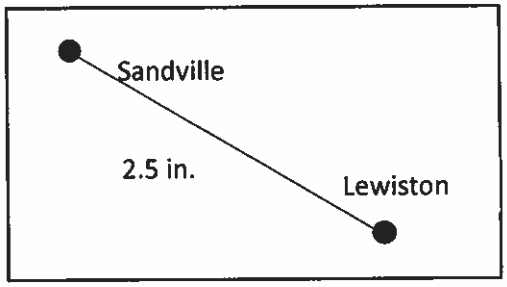
1. 1.5 mi = _____ ft
2. 6 ft = _____ yd
3. 5 qt = _____ cups
4. 2.25 lb = _____ oz
5. 3 cups = _____tbsp
6. 3 in = _____ ft
7. 10 c = _____ fl oz
8. A typical SUV weighs about 2.5 tons. How many pounds is that?

You Try

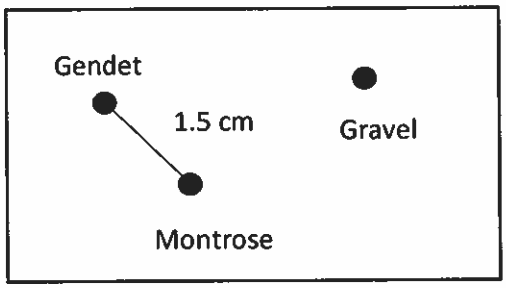
1. 2640 ft = _____ mi
2. 36 yd = _____ ft
3. 1½ qt = _____ cups
4. 96 oz = _____ lb
5. 4 cups = _____ tbsp
6. _____ in = 6 ft
7. 6.5 c = _____ fl oz
8. A parachute falls at a speed of about 12 miles per hour. How many feet did the parachute fall in one hour?

Unit 9 Video 6 Practice Problems

1. The distance between Sandville and Lewiston is shown on the map. What is the actual distance between the towns? Scale: 1 inch = 20 miles



2. Using the scale 1 centimeter = 16 kilometers. What is the actual distance between Gendet and Montrose?



3. What is the weight of a 3-pound human brain in ounces?

4. A moderate amount of daily sodium consumption is 2,000 milligrams. What is this mass in grams?

5. The height of a doorway is 2 yards. What is the height of the doorway in inches?

6. Elena wants to buy 2 gallons of milk but can only find quart containers for sale. How many quarts does she need?

7. An oak tree is planted when it is 250 centimeters tall. What is the height in meters?

Unit 9 Video 7 Name: _____

CCM6 Converting Customary Measurements

Common Customary Conversions:

Fill in the table:

Length	Volume
Weight	

Complete the unit conversions:

1. 1.5 mi = _____ ft
2. 6 ft = _____ yd
3. 5 qt = _____ cups
4. 2.25 lb = _____ oz
5. 3 cups = _____ tbsp
6. 3 in = _____ ft
7. 10 c = _____ fl oz
8. A typical SUV weighs about 2.5 tons. How many pounds is that?

You Try

1. 2640 ft = _____ mi
2. 36 yd = _____ ft
3. 1½ qt = _____ cups
4. 96 oz = _____ lb
5. 4 cups = _____ tbsp
6. _____ in = 6 ft
7. 6.5 c = _____ fl oz
8. A parachute falls at a speed of about 12 miles per hour. How many feet did the parachute fall in one hour?

Name:_____ Date:_____ Period:_____

(6.RP.3d)Exit Ticket Directions: Please solve the following problem making sure to show all of your work and be sure to explain why you agree or why you disagree with Jake.

Jake has five pieces of wood that are each 12 feet long. He plans to make two bookcases and each bookcase will have six shelves and each shelf will be 48 inches long. Jake claims he has enough wood for the shelves. Do you agree or disagree? Explain.

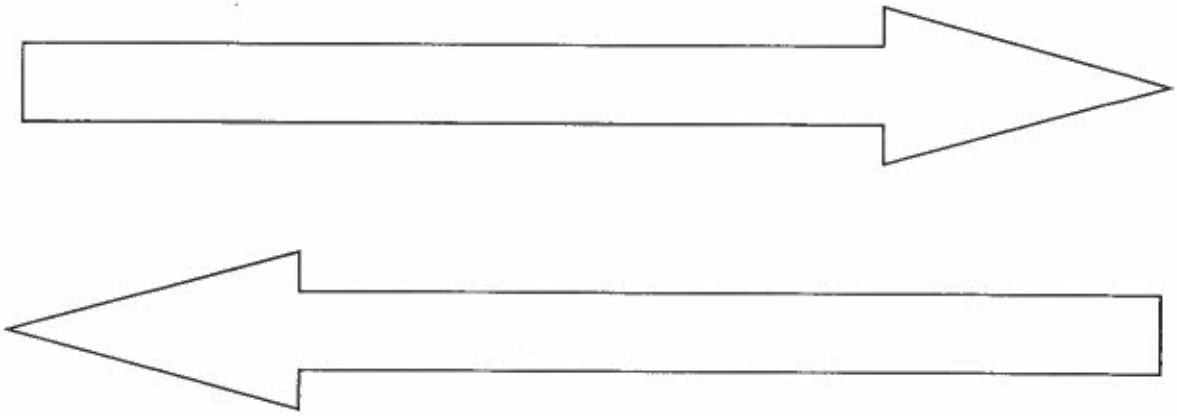
Unit 9 Video 8 Name: _____

CCM6 Converting Metric Measurements

Common Metric Conversions:

Fill in the table:

Fill in the arrows:



Complete the unit conversions:

Try Together:

1. 18 L = _____ mL
2. 550 cm = _____ m
3. 3 cm = _____ mm
4. 29010 mL = _____ L
5. 6 kg = _____ g
6. 17 mm = _____ cm
7. _____ L = 12 mL
8. 4 km = _____ mm
9. 14 hg = _____ g
10. 201 g = _____dg

You Try:

1. 0.04 L = _____ mL
2. 771 cm = _____ m
3. 34 cm = _____ mm
4. 2.34 mL = _____ L
5. 113.6 g = _____ kg
6. 3.7 mm = _____ cm
7. _____ L = 5500 mL
8. 1.46 kg = _____ mg
9. 0.23 hg = _____ g
10. 19 g = _____ dg

Unit 9 Video 9 Notes Name: _____

CCM6 Converting Between Customary & Metric Units

Common Customary and Metric Conversions:
Fill in the table:

Length	Weight	Volume

Complete the unit conversions:

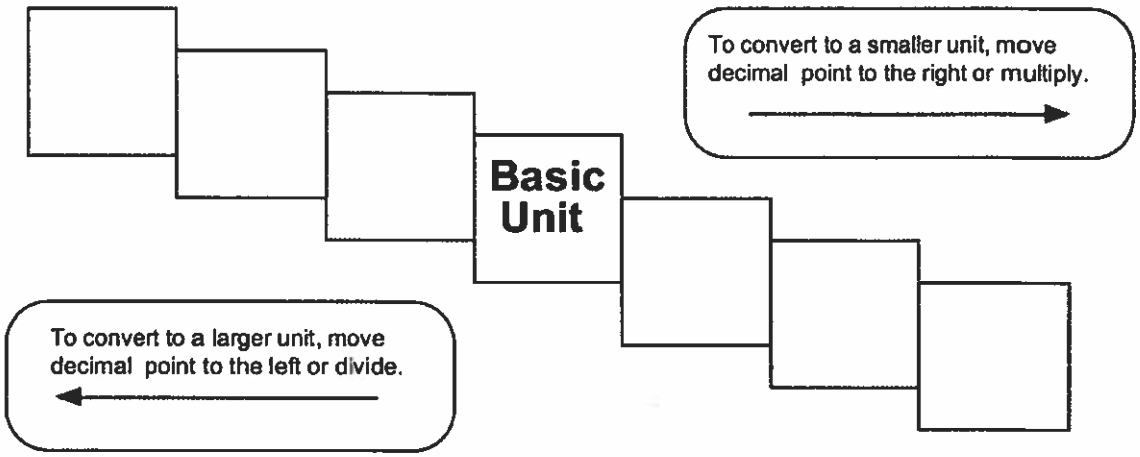
1. 5 gal ≈ _____ L
2. 7 mi ≈ _____ km
3. 45 kg ≈ _____ lb
4. 8 cups ≈ _____ mL
5. Mammoth Cave is the longest cave system in the world. So far, 365 miles of the cave have been explored. What is this distance in kilometers?

You Try

1. 12 gal ≈ _____ L
2. 68 mi ≈ _____ km
3. 90 lb ≈ _____ kg
4. 8 pints ≈ _____ mL
5. An Olympic-size swimming pool is 50 meters long. About how many feet long is the pool?

Name _____ Period _____

Metric Conversions!



For every metric conversion you should ask yourself:

1) Am I moving up or down the stairs?
2) How many places?
3) Which way do I move the decimal?

Example: 10mm = _____cm

1) Up or down? Up
2) How many steps? One
3) Which way do I move the decimal? Left

Answer: 10mm = 1.0 cm

Try these conversions, using the ladder method.

1000 mg = _____ g

1 L = _____ mL

160 cm = _____ mm

14 km = _____ m

109 g = _____ kg

250 m = _____ km

Lesson modified from: T. Trimpe 2000 http://sciencespot.net/

Metric System

1. Convert

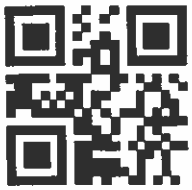
4 kL = _____ L

2. Convert

1.3 m = _____ hm

3. Convert

5.7 kg = _____ mg



4. Convert

15 mL = _____ kL

5. Convert

9 mm = _____ cm

6. Convert

3 g = _____ kg

7. Convert

203 L = _____ cL

8. Convert

50 km = _____ m

9. Convert

18 hg = _____ mg

10. Compare <, > or =.

1.4 kL _____ 1400 L

11. Compare <, > or =.

320 cm _____ 4 m

12. Compare <, > or =.

0.2 kg _____ 184 g

Converting Between Systems

1 lb. ≈ 0.45 kg

Weight ≈

_____ kg.

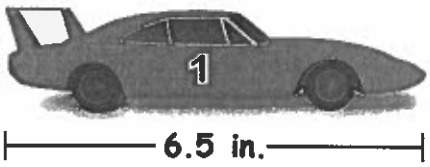
1 oz. ≈ 29.6 mL

12 oz. each

Cans of soda ≈

_____ mL.

1 in. ≈ 2.54 cm.



6.5 in.

Toy car length ≈

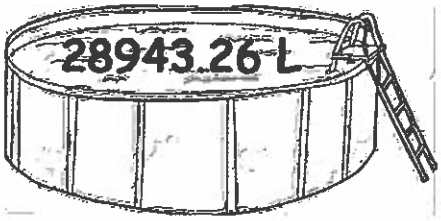
_____ cm

1 T ≈ 907.2 kg.

Tractor Trailer Truck ≈

_____ T

1 gal ≈ 3.79 L



Pool ≈

_____ gal

1 mi ≈ 1.61 km

Race ≈

_____ mi

Unit 6 Review Stations

1.	**2.**
3.	**4.**
5.	**6.**

Why or Why Not?

Sarah said there were 135 students in the sixth grade. The sixth grade students make up 3/10 of the student population which is 550.

- Is Sarah correct?
- Why or why not?

A recipe for snack mix calls for 1 ½ cups of chocolate chips, which serves 4 people. Mary wants to make snack mix for 10 of her friends so she bought 4 cups of chocolate chips.

- Did Mary buy enough chocolate chips?
- Why or why not?

Billy is setting up a 10 mile race and will be posting a sign every ½ mile. Billy bought 25 signs to post.

- Did Billy buy enough signs?
- Why or why not?

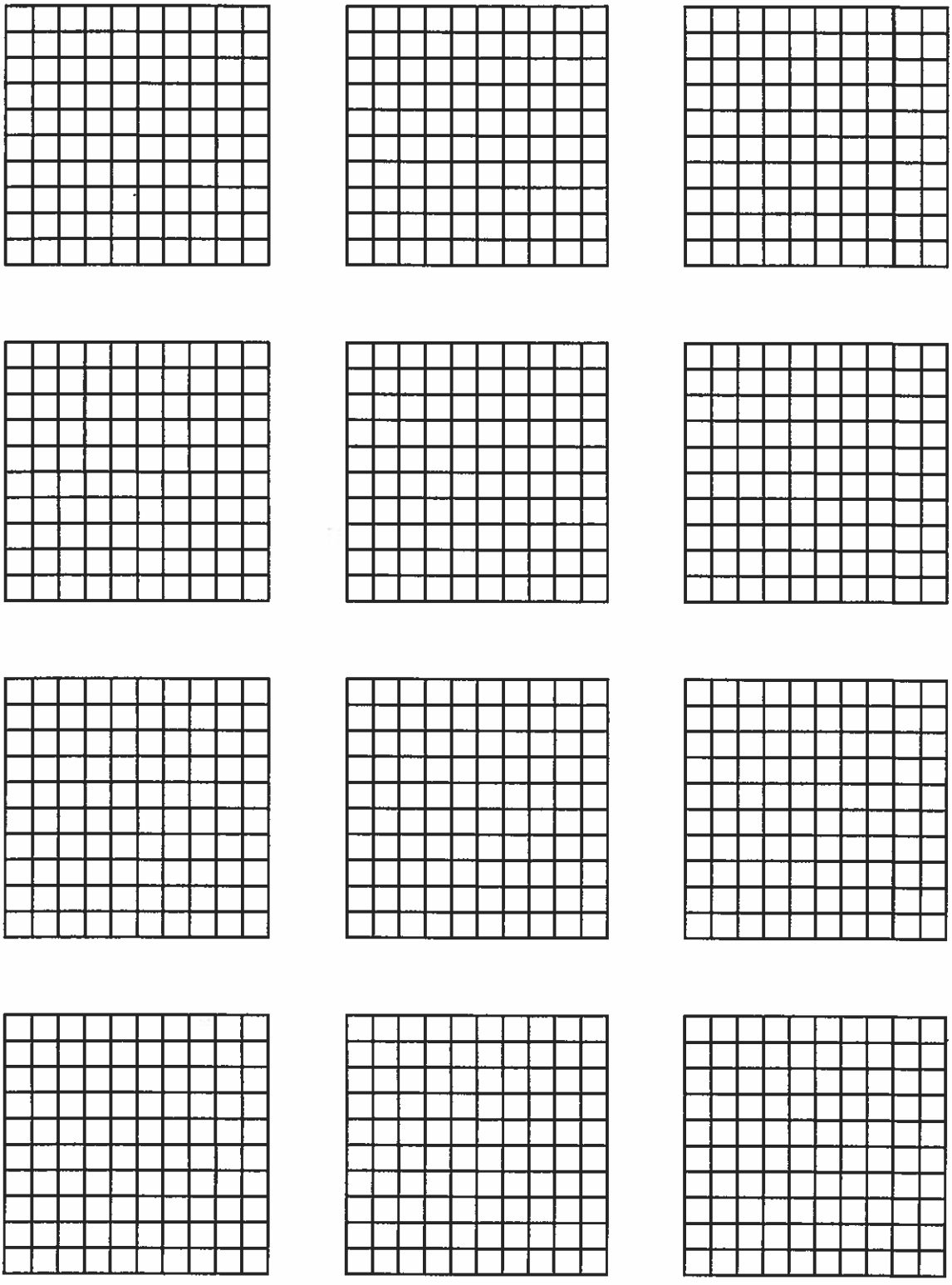
Shared at Department Chair Meeting - October 2015

Unit 10 Vocabulary

Vocabulary Word	Definition
Percent	One part in every hundred

10 × 10 Grids

NAME _____



Name: _____ Date:_____

Percentage Squares

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

There are 100 squares in this grid. We will look at percentages (%) which are always out of 100.
When we say 50% we mean 50 out of 100 or 50/100, just as 23% is 23 out of 100 or 23/100.

Color the following number of square:

6% red = ___ squares

9% yellow =

10% light blue = ___ squares

3% dark blue =

25% green = ___ squares

17.5% pink =

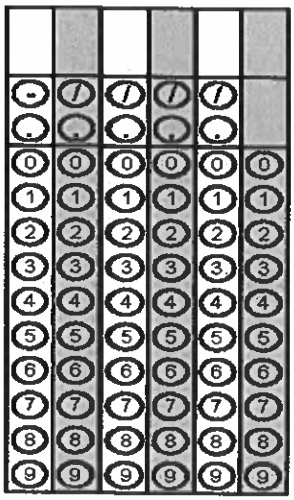
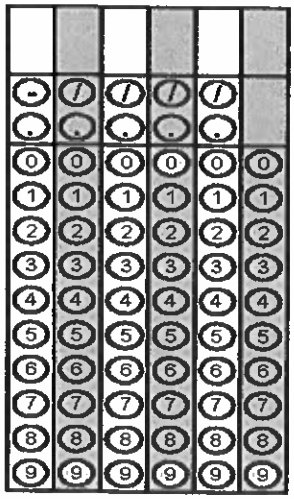
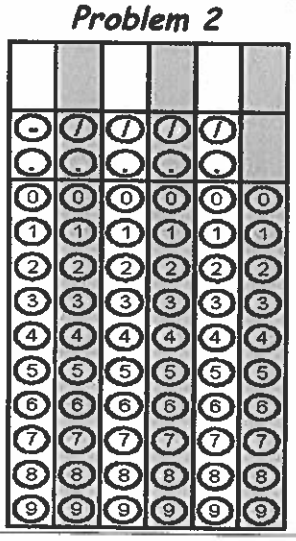
1% black = ___ squares

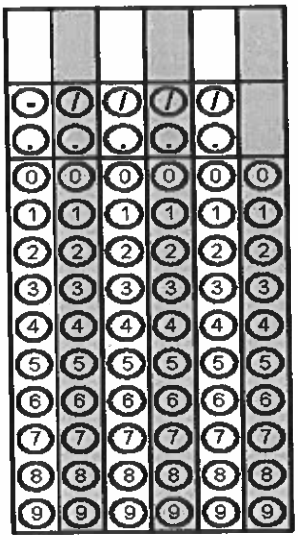
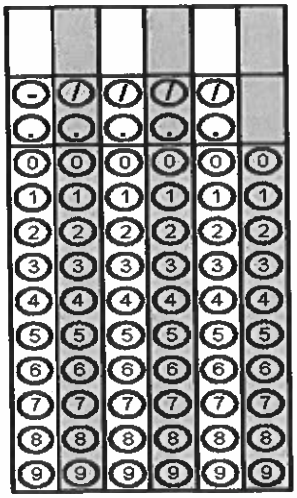
2.5% orange =

7% purple = ___ squares

9% dark green =

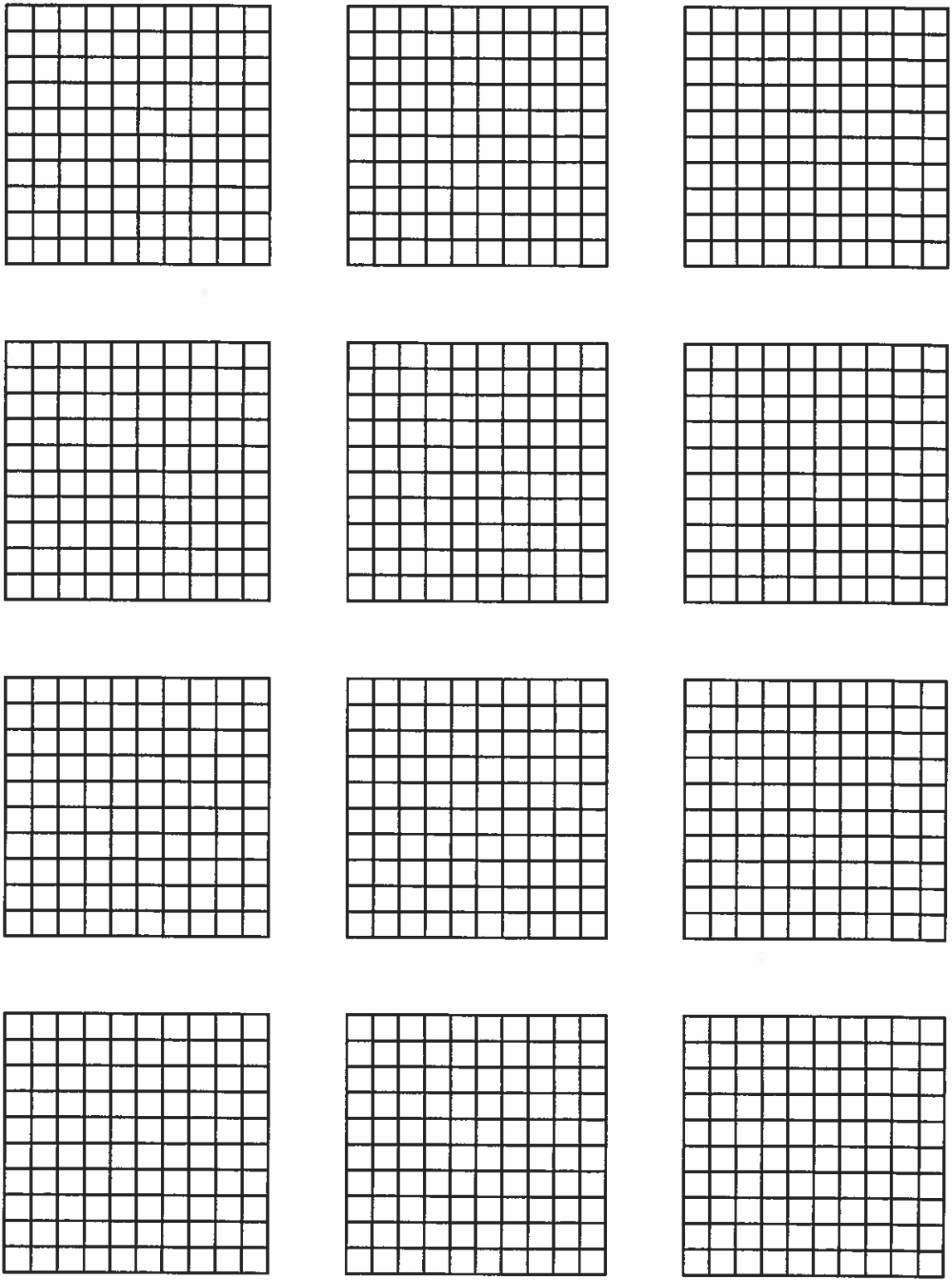
What percentage of squares remains? _____ squares = _____%

	Problem 1	Problem 2	Gridded Response
Monday	Dash Donuts sells donuts in boxes of six for \$3.25. Sugar Buns sells boxes of eight for \$4.75. Which donut shop has a better buy?	Solve for x. $7x + 4x + 2x = 156$	***Problem 2*** 
Tuesday	Ari looks at the unit price labels of his two favorite crackers and notices that the smaller box costs 0.428 per ounce and the larger box costs 0.42 per ounce. Which box of crackers is the better deal?	Mo's parents gave him \$25 to go the mall and movies. He spent 48% on pizza and a movie. How much money does he have left? *Express your answer in dollars and cents.*	***Problem 2*** 
Wednesday	Combine like terms. $6r^2 + 9s + 5s + 7 + r + 2r^2$	Evaluate $\left[\frac{2}{7}(x^2 - 2)\right]^4$ if $x = 3$	***Problem 2*** 

Thursday	Max, Spencer, and Oriana must cut a piece of yarn between 8.5 and 8.75 centimeters in length for an art project. Max cuts a piece that is 8.45 centimeters, Spencer cuts a piece that is 8.58 centimeters, and Oriana cuts a piece that is 8.8 centimeters. Whose piece should they use?	Simplify: $3\frac{3}{8} \div 1\frac{5}{16}$ *Express your answer as an improper fraction.*	***Problem 2*** 
Friday	Simplify: $\frac{(3\times5-2)^2+7}{2+52\div(3\times2)}$	Cherry's family went out for ice cream and bought 4 cones for $3.69 each. They had a coupon for 15% off. If their total was $13.30, what was the tax rate? Round to the nearest percent.	***Problem 1*** 

10 × 10 Grids

NAME _____



Unit 10 Video 1 Notes

Name _____ Date _____

Fractions, Decimals, and Percents

Ex 1) Write 35% as a fraction

Ex 2) Write 7% as a fraction

Ex 3) Write 35% as a decimal

Ex 4) Write 7% as a decimal

Ex 5) Write 0.7 as a percent

Ex 6) Write 0.56 as a fraction

Ex 7) Write 7/50 as a percent

Ex 8) Write 24/25 as a decimal

In class Practice Problems

1) Write 65% as a fraction

2) Write 3% as a fraction

3) Write 65% as a decimal

4) Write 3% as a decimal

5) Write 0.4118 as a percent

6) Write 0.8 as a fraction

7) Write 11/50 as a percent

8) Write 1/8 as a decimal

Methods to Convert Between...

FRACTIONS, DECIMALS, & PERCENTS

% to FRACTION	FRACTION to %
% "percent" means _____ Put the percent over 100 & reduce:	Set up a proportion:
DECIMAL to %	**% to DECIMAL**
_____ by 100	_____ by 100
FRACTION to DECIMAL	**DECIMAL to FRACTION**
Divide the _____ by the _____	Say the number "out loud" -OR- use place value

Complete the chart: Name:_____

United States Recycling

Material	Fraction	Percent	Decimal
Yard Waste	$\frac{1}{10}$		
Glass		17%	
Paper	$\frac{3}{50}$		
Plastics		58%	

Wednesday, February 21st Stations Student Answer Sheet Name: _____ Period: _____

Station 1

Ingredients	Amount (lb)	Write each ingredient as a fraction in simplest form	Write each ingredient as a percent
Meat	0.35		
Vegetables	0.15		
Secret Sauce	0.05		
Bread	0.7		

Station 2

A survey showed that 82% of youth most often use the Internet at home. What fraction of youth surveyed most often use the Internet somewhere else?	

Station 3

The circle graph show the fraction of each type of weather during September.

A. What percent of the days were sunny?
B. What percent of the days were rainy?

Station 4

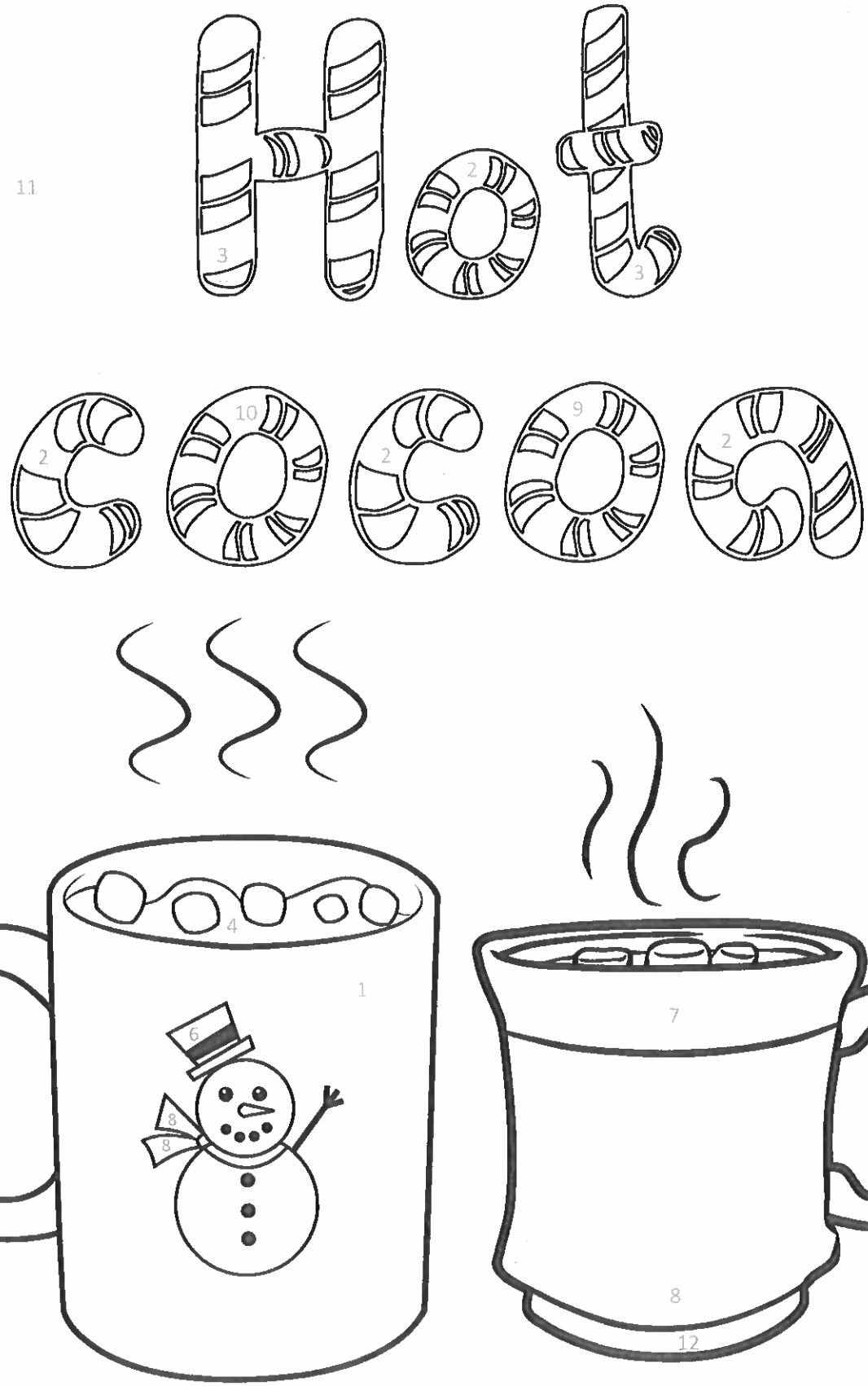
Element	Percent
Magnesium	.05%
Potassium	0.35%
Sodium	0.15%
Sulfur	0.25%

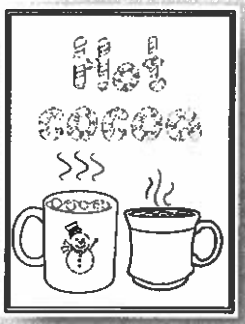
A. Write the percent of magnesium found in the human body as a decimal. _____
B. Which element makes up 1/400 of the human body _____

Station 5

A. Player	Tricia	Min	Pele
Goals	4/5	0.41	48%

In the table above, who blocked the greatest amount of goals? Explain your reasoning.


Hot
COCOA



Hot Cocoa

Name: _____

Date: _____

Practice and Color

Directions: Each problem is the directions for or an example of converting between a decimal, fraction, or percent. Determine the correct conversion and use the key at the bottom to color the hot cocoa picture.

1. 1. Rewrite the % over 100 2. Simplify	2. 1. Move decimal two places to the right. 2. Add the % sign.	3. 1. Divide the numerator by the denominator.
4. 1. Convert the fraction to a decimal. 2. Move the decimal two places to the right. 3. Add the % sign.	5. 1. Remove the % sign. 2. Move decimal two places to the left.	6. 1. Write the decimal over 100 if it has an integer in the hundredths place or over 10 if only in the tenths place. 2. Simplify
7. 0.25 → 25%	8. 1/8 → 1 ÷ 8 = 0.125	9. 0.25 → 25/100 → 3/4
10. 38% → 38/100 → 19/50	11. 1/5 → 0.2 → 20%	12. 75% → 0.75

Key:

Fraction → Decimal = red
Decimal → Percent = green
Percent → Fraction = light blue
Fraction → Percent = brown
Decimal → Fraction = yellow
Percent → Decimal = dark blue

Unit 10 Video 2 Name _____ Date _____

Solving Percent Problems

Ex 1) 20% of 70 plants

Ex 2) 5% of 220 files

Ex 3) 25% of $4.40

Ex 4) A student earned a grade of 80% on a math test that had 20 problems. How many problems on the test did the student answer correctly?

Ex 5) Courtney's basketball team scored 60 points at the game. Courtney scored 20% of the team's points. How many points did Courtney score?

Ex 6) George found a wrecked Trans-Am he could fix. He bought the car for 65% of the original price of $7200. What did he pay for the car?

Practice Problems

1) 85% of 40 emails

2) 4% of 50 books

3) 75% of $15.00

4) There are 22 students in Mrs. Alaimo's class. About 36 % of the students received an A on the last math test. About how many students received an A?

5) Gavin likes to collect toy cars. He has 90 cars in his collection and 30% of them are blue cars. How many blue cars does Gavin have in his collection?

6) Ben earns $12,800 a year. About 15% is taken out for taxes. How much is taken out for taxes?

Problems Unit 10 Video 2 Thursday

1. Chris is taking a trip. He has traveled 9 miles and knows that 60% of his trip is complete. How many total miles is Chris' trip?

2. What is the decimal and percent for the fraction $\frac{7}{8}$?

3. The sales tax on the purchase of a refrigerator that costs $695 is 7%. What is the amount of sales tax?

4. Benson is keeping track of the amount of salt he consumes each day. According to the label on his macaroni and cheese box, one serving contains 470 mg of sodium (salt). If 470 mg is 20% of the recommended daily amount, how many milligrams of sodium are recommended for the whole day? Show your work!

5. East Side Middle School has 1,500 students. Thirty-two percent of them are in sixth grade. How many sixth-grade students are there?

Name: _____ Date: _____ Period: _____

6.RP.3c Exit Ticket

Directions: Find the unknown value using equations. (Follow the steps you learned today in class. You may use your notes.)

1. George saved 35% of the money he earned. If George earned $260, how much did he save?

2. 54 is 75% of _____

Name: _____

Unit 10 Video 3: Percent Problems with Proportions and Equations

Percent	

VIC #1	

Steps for using Proportions:	1. 2. 3. 4.

Solve using a Proportion

1. 12 is 40% of what number?
2. 40 is what percent of 5?
3. Find 60% of 85.

Steps for using equations	1. 2. 3. 4.

Solve using an equation:

1. 15 is 25% of what number?
2. What percent of 300 is 129?
3. What is 95% of 40?

In class problems:

Solve using a Proportion

1. 36 is 50% of what number?

2. What percent of 80 is 20?

3. Find 35% of 120.

Solve using an equation:

1. 4 is 80% of what number?

2. 39 is what percent of 78?

3. What is 55% of 985?

Problems Unit 10 Video 2 Friday

6. Sandy recorded the percent of her clothing that is red, yellow, blue, or green.

   The results are shown in the table. If Sandy has 85 pieces of clothing, how many pieces of blue clothing does she own?

Color	Percent
Red	10%
Yellow	15%
Blue	40%
Green	35%

7. Write 0.8 as a percent. Then, write $\frac{7}{20}$ as a percent.

8. What is 40% of 830?

9. Kevin goes to a sporting goods store to buy a football helmet that costs $124. If the helmet is discounted 25%, what is the discounted price of the helmet?

10. A stove that costs $695 will be on sale next week for 28% off its regular price. What is the amount in savings? What will be the total cost of the stove after the savings?

11. In math class, 60 percent of the student are males. There are 30 students in the class. How many students are males? How many are females?

Name _____ Date _____ Period ____

1. Darnell's team scored 80 points at the game. Darnell scored 30% of the team's points. How many points did Darnell score?

A. 20 B. 2.4 C. 240 D. 24

2. Sam is taking a trip to another town. He has traveled 27 miles and knows that 45% of his trip is complete. How many total miles is Sam's trip?

A. 12.15 B. 121 C. 600 D. 60

3. The standard length of a roll of wrapping paper is 96 inches. Kelsey uses 20% of the wrapping paper to wrap a gift for her friend's birthday present. How long is the piece of wrapping paper that was used?

A. 48 m B. 18.8 m C. 19.2 m D. 192 m

4. What is 30% of 560?

A. 16.8 B. 168 C. 18.6 D. 186

5. Maria wanted to buy a new jacket that costs $40. If the jacket is discounted 15%, how much money will Maria save on her purchase?

A. $6 B. $26.67 C. $2.67 D. $25

6. Cathy recorded the percent of her clothing that is red, yellow, blue, or orange.

The results are shown in the table. If Cathy has 80 pieces of clothing, how many pieces of orange clothing does she own?

Color	Percent
Red	5%
Yellow	25%
Blue	50%
Orange	20%

A. 16 B. 60 C. 4 D. 40

7. At Pizza Pi, 10% of the pizzas made last week had extra cheese. If 25 pizzas had extra cheese, how many pizzas in all were made last week?

A. 250 B. 35 C. 2.5 D. 40

Name: _____

Unit 10 Video 4: Word Problems with Percents

Percent	

Remember:	

Steps for Solving Word Problems:	1. 2. 3. 4.

Solve:

1. Michelle has gone for a walk. She has walked 6 miles so far. This is 30% of the total distance. What is the total number of miles she will walk?

2. Hector placed an order with a bakery for pastries. The baker has completed 37.5% of the order after baking 81 pastries. How many pastries did Hector order?

3. The frozen yogurt stand in the mall sells 420 yogurt cups per day. Forty-five percent of the cups are sold to middle school students. How many yogurt cups are sold to middle schoolers each day?

4. The seventh grade students at your middle school are going on a field trip. As of today, 85% of the 280 students have turned in their permission slips. How many students have turned in their permission slips?

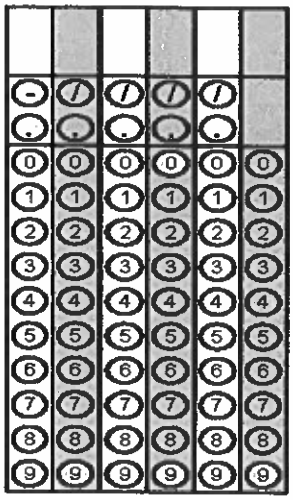
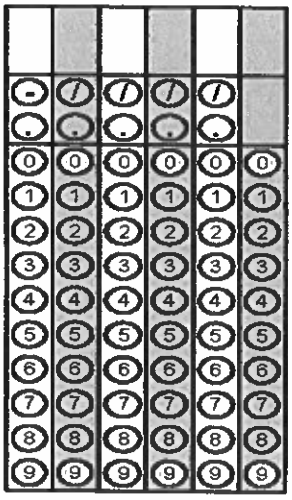
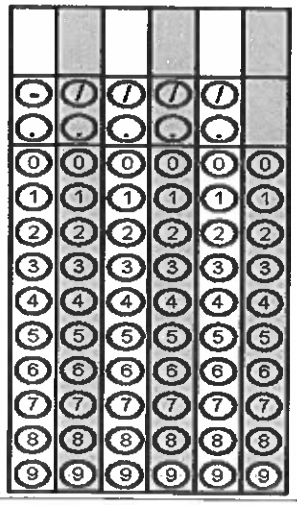
In class Problems:

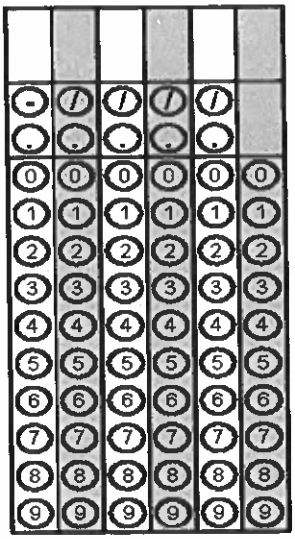
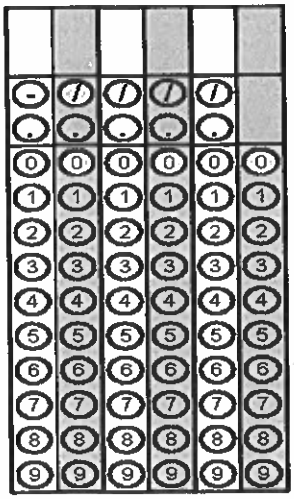
1. The Smith family spent 28% of their monthly income for housing. If the family's monthly income is $3,200, how much did they spend for housing?

2. George saved 35% of the money he earned. If George earned $260, how much did he save?

3. Brenda earned $120 per week working at a part-time job. This is only 78% of what she earned. What is the full amount of Brenda's check?

4. Jerry took a test with a total of 50 questions. His teacher told him that he must answer 90% of the questions correctly to get an A. How many questions does he need to answer correctly to earn an A?

	Problem 1	Problem 2	Gridded Response
Monday	What is your total bill including tip if your dinner bill is \$32.49 and you want to leave a 15% tip? Round to the nearest hundredth.	Frank is planning a party at a local park. The picnic tables are $5\frac{1}{2}$ feet wide and $7\frac{1}{4}$ feet long. Frank has a table cloth with an area of 35 square feet. Will this table cloth be large enough to cover a picnic table?	***Problem 1*** 
Tuesday	Maxwell makes a 3% commission on the mobile phones he sells. If he earns \$500 per week before commission, how much merchandise will he have to sell to make a total of \$1075 this week?	Joshi dines at Papa Joe's Pizza and pays \$21.99 for 3 medium pizzas. Heydi dines at Little Italy Pizza and pays \$15.99 for 2 medium pizzas. Who got the better deal?	***Problem 1*** 
Wednesday	Evaluate $4xy$ if $x = 4.5$ and $y = 2.03$.	Evaluate $\left(\frac{3}{5}\right)^4$.	***Problem 1*** 

Thursday	Ray pays $3.09 per gallon for gas. At this rate, how much did he pay for 12.5 gallons of gas? *Express your answer in dollars and cents.*	At the grand opening at Frankie's Burgers every 4^{th} person gets a free hamburger and every 6^{th} person gets a free sundae. How many of the first 150 diners will receive a free hamburger and a free sundae?	***Problem 1*** 
Friday	To find the surface area of a cube the formula $SA = 6s^2$ can be used. What is the surface area of a cube with a length of 2.4 cm?	Tom and Brady's family go to the movies and buy 4 tickets, four drinks, and two large buckets of popcorn. If a movie ticket costs $5.25 per person, popcorn is $6.50, and drinks are $3.25 each, how much did they spend in total?	***Problem 2*** 

Unit 10 Review Stations Name: _____ Date: _____ Period: ____

1.	2.	3.
4.	5.	6.
7.	8.	9.
10.	11.	

Work Space for Stations

Unit 11 Video 1 Notes Name: _____

Area and Perimeter

Perimeter:	
Area:	
Example:	

Formulas and Examples: If you need a specific shape look for it in the notes and the number listed after it is when it is shown in the video.

Shape Square (1.05)	Area	Perimeter
Square:		
Example:		

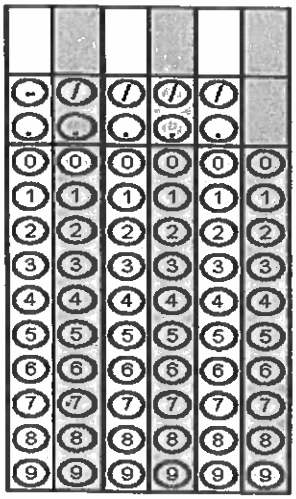
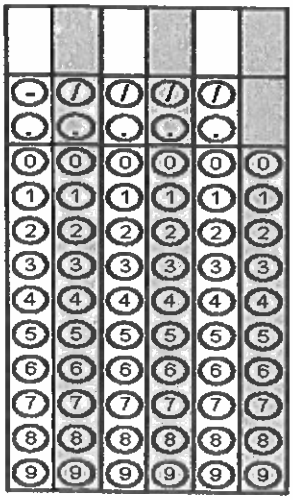
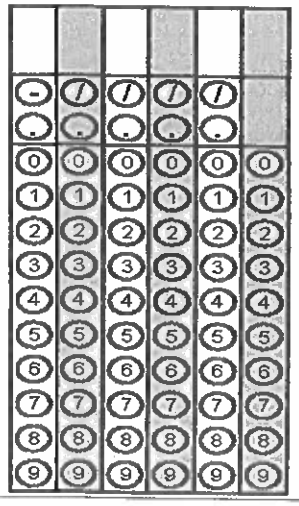
Shape Rectangle (3.21)	Area	Perimeter
Rectangle: Example:		

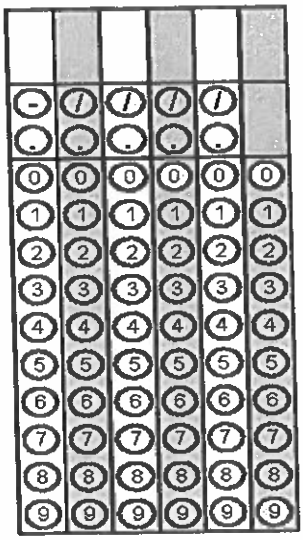
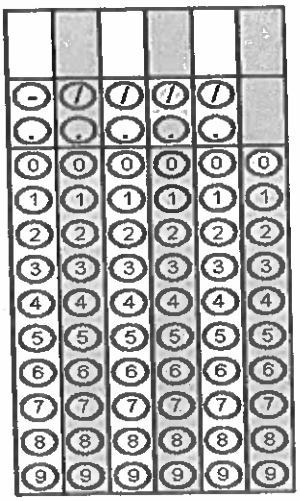
Shape Triangle (6.09)	Area	Perimeter
Triangle: Example:		

Shape Parallelogram (10.10)	Area	Perimeter
Parallelogram:		
Example:		

Shape Trapezoid (12.27)	Area	Perimeter
Trapezoid:		
Example:	Example using formula: $\frac{1}{2} \cdot h(b1 + b2)$ b1 represents top base b2 represents bottom base $\frac{1}{2} \cdot 4(12 + 18)$ Follow order of operations =60 units^2	

Additional Notes

		Problem 2	Gridded Response
Monday	Anthony is trying to decide if he should buy a value meal or each item separately. The value meal is $5.00. If he buys the items separately he will pay $3.20 for a sandwich, $0.88 for a bag of chips and $0.99 for a soft drink. Which is the better deal? How much will he save? *Express your answer in dollars and cents.*	Which number is farther from 5 on a number line? -5.14 or 11.5	***Problem 2*** 
Tuesday	Which number is closest to zero? $\frac{3}{5}$ 72% 0.777	Drive Far is currently selling gas for $2.99 per gallon. At noon, the gas price will increase to $3.49 per gallon. What is the difference in their profit if they sell 450 gallons of gas before noon versus after noon?	***Problem 2*** 
Wednesday	Jaime paid $54.49 total for a pair of jeans that cost $49.99 before tax. What was the tax rate for her purchase?	Astrid purchased 5 items from the dollar store. What is her total price if she pays 6.5% sales tax? *Express your answer in dollars and cents.*	***Problem 2*** 

Thursday	Norman uses $2\frac{3}{4}$ cups of oats and $1\frac{2}{3}$ cups of blueberries for his favorite oatmeal receipt. If this recipe makes 8 servings, how much of each ingredient would she need for 20 servings?	Mr. Yi's first period has 35 kids. The ratio of boys to girls is 2:3. How many more girls than boys are in the class?	***Problem 2*** 
Friday	Find the volume of a rectangular prism with dimensions of 6cm, 3cm, and 4cm.	Complete the table for the rule $y = 3x - 4$. | x | y | | --- | --- | | 5 | | | 10 | | | 15 | | | 55 | |	***Problem 1*** 

Unit 11 Math Vocabulary

Vocabulary Word	Definition
Area	The amount of space inside a figure
Diagonal	Straight line joining two opposite corners of a square, rectangle, or other straight-sided shape
Dimensions	The size of an object
Horizontal	Line going left and right
Hypotenuse	The longest side of a right triangle
Perimeter	The measure around an object
Pi	The ratio of the circumference of a circle to the length of its diameter
Polygon	A closed plane figure formed by 3 or more line segments that intersect only at their endpoints
Quadrilateral	A four sided figure
Rectangle	A parallelogram with four right angles
Rhombus	A parallelogram with opposite equal acute angles, opposite equal obtuse angles, and four equal sides
Square	Four equal straight sides and four right angles
Trapezoid	Quadrilateral with one pair of opposite sides
Triangle	A 3-sided polygon

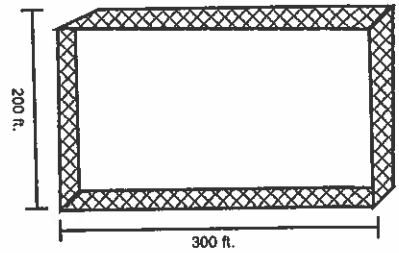
Name_____ Date_____

Perimeter

Story Problems

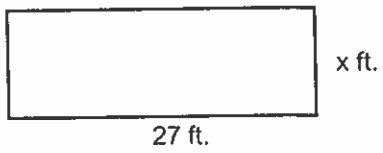
1. If the width of a rectangle is 14 inches and the length is 8 inches, what must the perimeter of the rectangle be?

2. A farmer is building a rectangular fence for his horses. It will cost him $1.19 per linear foot of fencing material. Study the diagram of the fence below and determine what the total cost of fence will be.

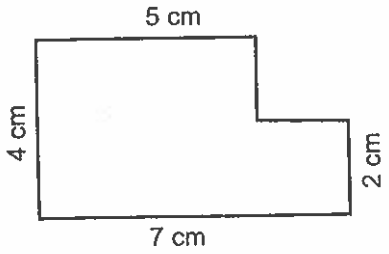


3. If the perimeter of a triangle is 50 cm and two sides are exactly 20 cm in length, what must be the length of the third side? What type of triangle has two sides that are equal in length?

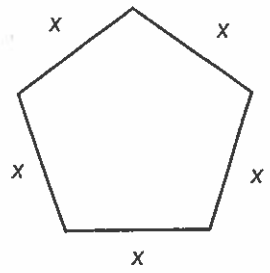
4. Study the rectangle below. If the perimeter of the rectangle is 72 ft., what must be the length of the unknown side?



5. Find the perimeter of the shape below.



6. If the perimeter of the regular pentagon is 12.5 inches, what must be the length of each side?



7. If the perimeter of a rectangle is 24 inches and the length of the rectangle is 3 times longer than the width, what must be the length and width of the rectangle?

8. A rectangle has a length of 20 cm. The width of the same rectangle is 1.5 times longer than its length. What is the perimeter of that rectangle?

Name_____ Date_____

Perimeter

Finding The Length Of An Unknown Side

PERIMETER

Perimeter is found by adding the distance of all sides of a shape. With a rectangle, the following formula can be used the find the perimeter.

$$P = 2(l+w)$$
or
$$P = 2l + 2w$$

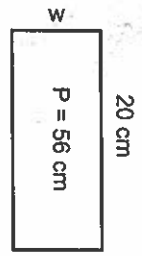
If only two sides of the rectangle are given and they are the length and the width, we can use the formula stated above.

Sometimes the perimeter of a rectangle will be given and you will have to find the length of one of the missing sides.

For example, what is the width of a rectangle that has a length of 20 cm and a perimeter of 56 cm?

Because the values of the perimeter and the length were given, we substitute these known values in for the "P' and the "L" of the equation P = 2L + 2W and solve for "W" because that is what we are looking for.

P = 2L + 2W
56 = 2(20) + 2(w)
56 = 40 + 2W
-40 -40
16 = 2W
2 2
w = 8 cm



Directions: For each rectangle, write the perimeter equation. Substitute the given variables and solve for the unknown side.

1) W
P = 16 in.
3.5 in.

2) 1.6 cm
L
P = 3.6 cm

3) 30 ft.
P = 128 ft.
L

4) W
P = 19 in.
6.5 in.

5) W
P = 218 ft.
24 ft.

6) 20.4 cm
L
P = 61.2 cm

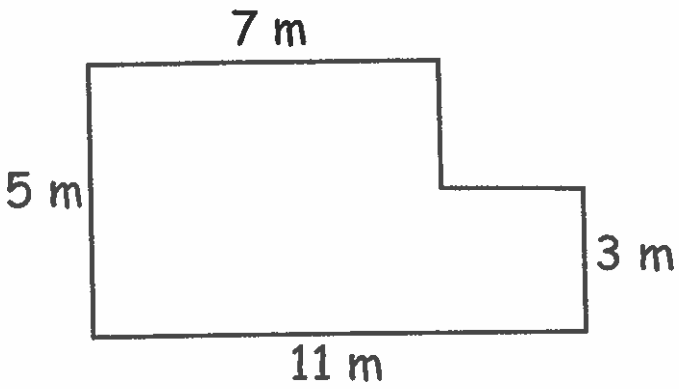
7) W
P = 140 in.
14 in.

8) 2.3 in.
P = 18.4 in.
L

9) 4.5 ft.
L
P = 23 ft.

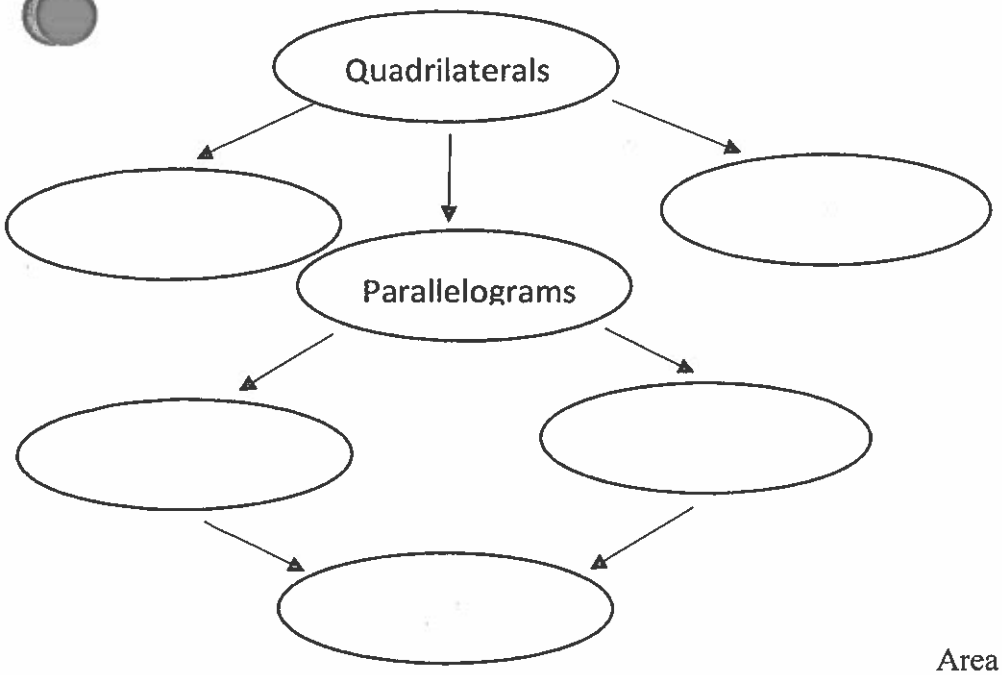
Name:_____ Date:_____ Period:_____

Look at the figure below. Write an explanation on how to find the missing dimensions and perimeter of the figure. Make sure you find and list the missing dimensions. (6.G.1)



Name _____ Date _____

Unit 11 Video 2: Area of Quadrilaterals



Parallelogram, Rectangle, Square
Area = bh

Ex1) What is the area and perimeter of a rectangle with a base of 10cm and a height of 7cm?

Area = _____ = _____

Perimeter = _____ = _____

2) What is the area of a parallelogram with a base of of 7 m and a height of 9 m?

Formula: _____

Substitution:_____

Answer: _____

Ex 3) The area of a parallelogram is 144 m^2. The base of the parallelogram is 8 m. What is the height of the parallelogram?

Formula: _____

Substitution:_____

Answer: _____

Ex 4) The length of one side of a square is 13cm. What is the area?

Formula: _____

Substitution:_____

Answer: _____

In Class Practice Problems

1) What is the area and perimeter of a rectangle with a base of 5 in and a height of 3 in?

Area = _____=_____ Perimeter = _____=_____

2) What is the area of a parallelogram with a base of 31 m and a height of 5m?

Formula: _____

Substitution:_____

Answer: _____

3) The area of a rectangle is 81 cm^2. The height of the rectangle is 3 cm. What is the base of the rectangle?

Formula: _____

Substitution:_____

Answer: _____

4) The length of one side of a square is 3cm. What is the area?

Formula: _____

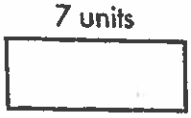
Substitution:_____

Answer: _____

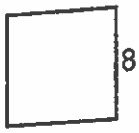
NAME _____

Lesson 6.2 Calculating Area: Quadrilaterals

Area is the number of square units it takes to cover a figure. To find the **area of a rectangle**, multiply the length by the width. $A = lw$



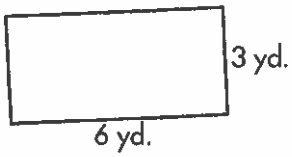
$A = 7 \times 2$
$A = 14$ square units



$A = s \times s = 8 \times 8$
$A = 64$ square units

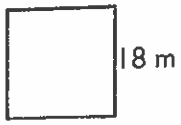
Find the area of each rectangle below.

a

1. 

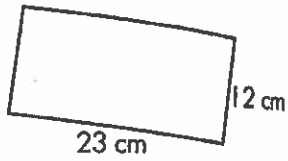
$A =$ _____ sq. yd.

b

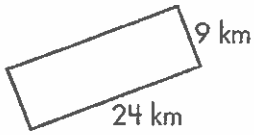


$A =$ _____ sq. m

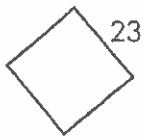
c



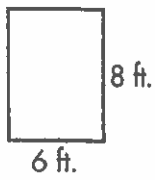
$A =$ _____ sq. cm

2. 

$A =$ _____ sq. km



$A =$ _____ sq. in.



$A =$ _____ sq. ft.

Find the length of each rectangle below.

3. 

$A = 54$ sq. in.
$\ell =$ _____ in.

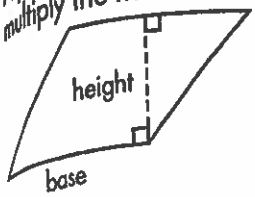
$A = 58.5$ sq. ft.
$\ell =$ _____ ft.

$A = 81$ sq. m
$\ell =$ _____ m

NAME _____

Lesson 6.2 Calculating Area: Quadrilaterals

A parallelogram is a polygon with 2 sets of parallel sides. To find the **area of a parallelogram**, multiply the measure of its base by the measure of its height: $A = b \times h$ or $A = bh$.



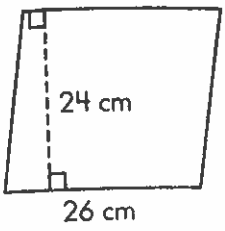
$b = 8$ in. and $h = 7$ in. What is A?

$A = b \times h$ $A = 8 \times 7 = 56$ in.^{2} or 56 square inches.

Find the area of each parallelogram.

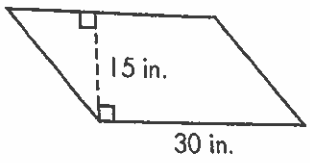
a

1.



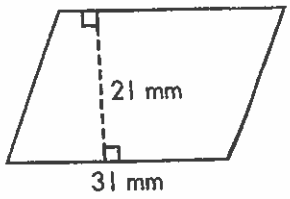
$A =$ _____ sq. cm

b



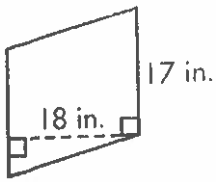
$A =$ _____ sq. in.

c

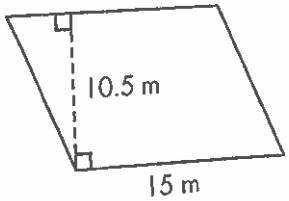


$A =$ _____ sq. mm

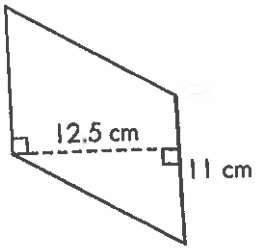
2.



$A =$ _____ sq. in.



$A =$ _____ sq. m



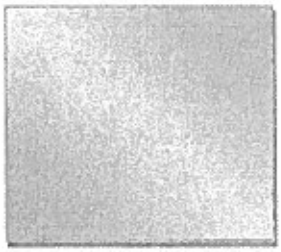
$A =$ _____ sq. cm

Name: _____ Date: _____

Find the Area Review

1. Find the area

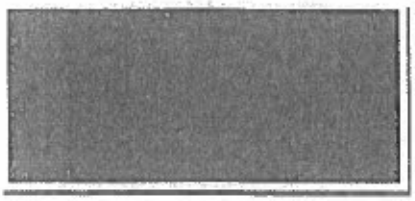
5 cm



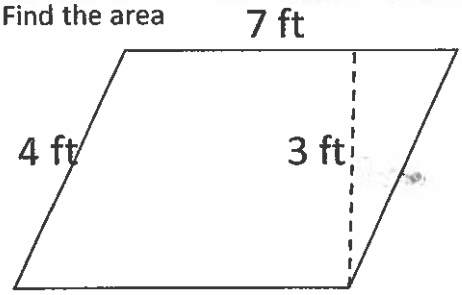
2. Find the area

15

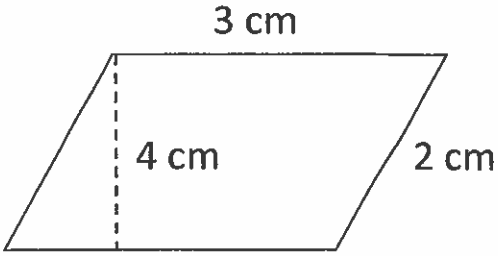
4



3. Find the area



4. Find the area



Unit 11 Video 3 Notes

Name _____ Date _____

Area of Triangles and Trapezoids

Area Formulas	
Trapezoid	Triangle
Area $= \frac{1}{2}h(b_1 + b_2)$	Area $= \frac{1}{2}bh$

Ex 1) Find the area of a triangle whose base is 9 in and height is 12 in.

Formula:_____

Substitution:_____

Answer:_____

Ex 2) Find the area of a trapezoid whose height is 4 meters and bases are 5 meters and 6 meters.

Formula:_____

Substitution:_____

Answer:_____

Ex 3) If the area of a triangle is 30 in² with a height of 4 in., find the base of the triangle.

Formula:_____

Substitution:_____

Answer:_____

Ex 4) If the area of a trapezoid is 51 in² with b_1 equal to 13 in and b_2 equal to 17 in, find the height of the trapezoid.

Formula:_____

Substitution:_____

Answer:_____

Practice Problems

1) Find the area of a triangle whose base is 4 ft and height is 15 ft.

Formula:_____

Substitution:_____

Answer:_____

2) Find the area of a trapezoid whose height is 6 cm and bases are 12 cm and 9 cm.

Formula:_____

Substitution:_____

Answer:_____

3) If the area of a triangle is 45 m^2 and the height is 9 m, find the base of the triangle.

Formula:_____

Substitution:_____

Answer:_____

4) If the area of a triangle is 36 cm^2 and the height is 9 cm, find the base of the triangle.

Formula:_____

Substitution:_____

Answer:_____

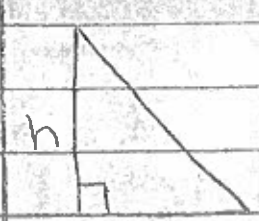
Extra Practice

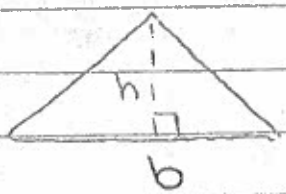
Name: _____

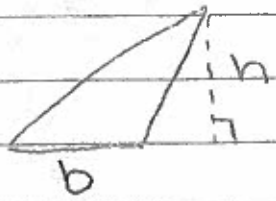
$A = \frac{1}{2}bh$

Triangle

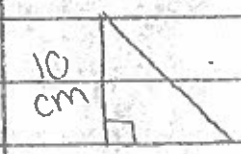
★ Multiply by $\frac{1}{2}$ is the same as dividing by 2 ★







Ex1

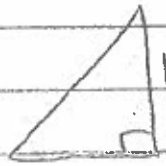


Formula:

Substitution:

Answer:

YT1



F:

S:

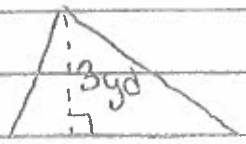
A:

Ex2

F:

S:

A:



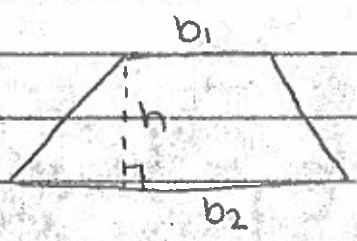
F:

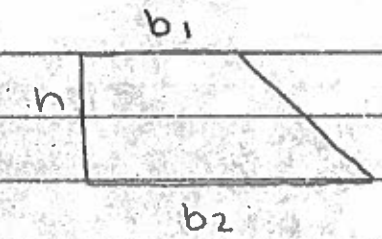
S:

A:

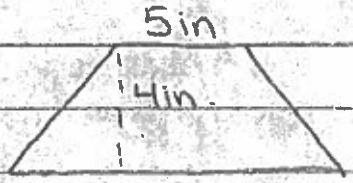
Trapezoid

$$A = \frac{1}{2}h(b_1 + b_2)$$





Ex1

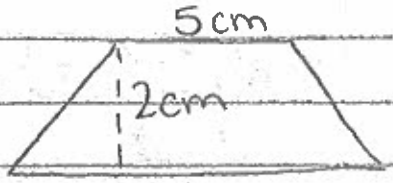


Formula:

Substitution:

Answer:

YT1

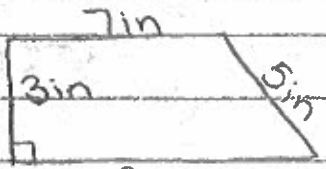


F:

S:

A:

Ex2

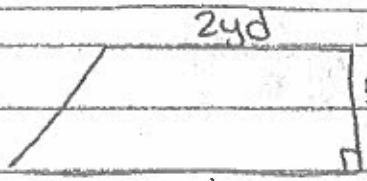


F

S

A

YT2



F

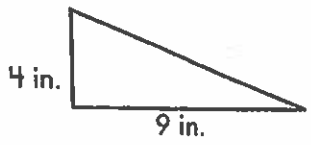
S

A

NAME _____

Lesson 6.1 Calculating Area: Triangles

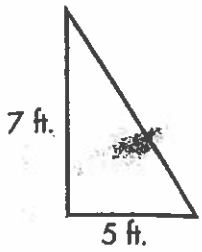
The area (A) of a triangle is one-half the of the base (b) times the height (h).



$$A = \frac{1}{2} \times b \times h$$

or

$$A = \frac{1}{2}bh$$



$A = \frac{1}{2} \times 9 \times 4$

$= \frac{1}{2} \times 36$

$= 18$

$A = 18$ square inches

$A = \frac{1}{2} \times 5 \times 7$

$= \frac{1}{2} \times 35$

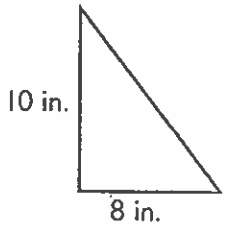
$= 17\frac{1}{2}$

$A = 17\frac{1}{2}$ square feet

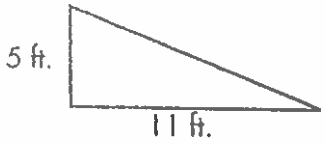
Find the area of each right triangle.

a **b**

1.

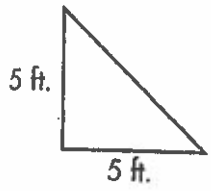


$A =$ _____ sq. in.

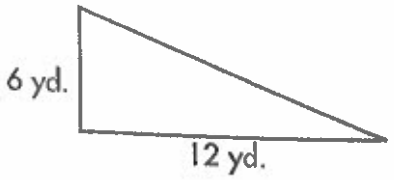


$A =$ _____ sq. ft.

2.



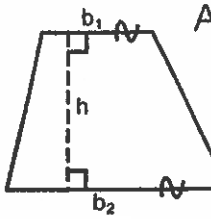
$A =$ _____ sq. ft.



$A =$ _____ sq. yd.

Name _____ Date _____

Area: Trapezoids

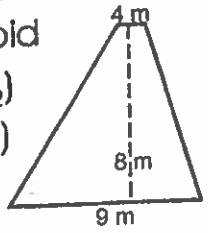


Area of a Trapezoid

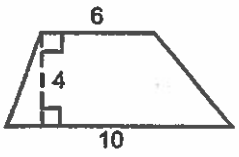
$A = \frac{1}{2} h (b_1 + b_2)$

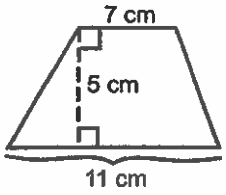
$A = \frac{1}{2} \cdot 8 (4 + 9)$

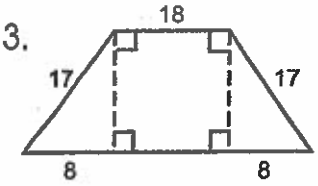
$a = 52m^2$

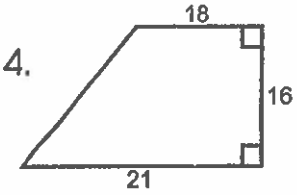


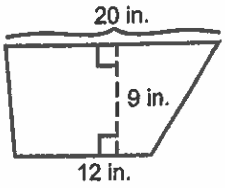
Find the area of each trapezoid.

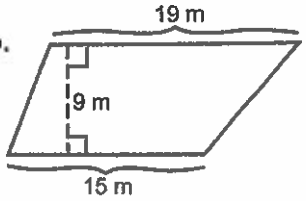
1. 

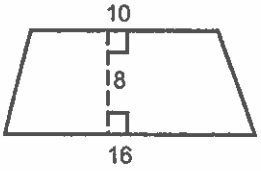
2. 

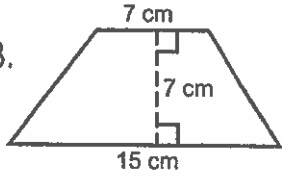
3. 

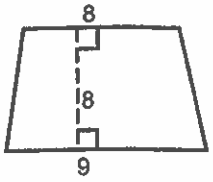
4. 

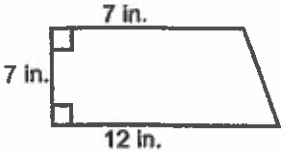
5. 

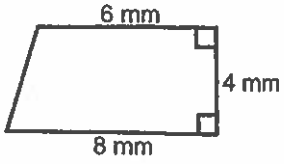
6. 

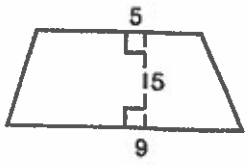
7. 

8. 

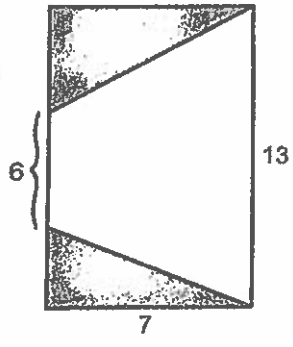
9. 

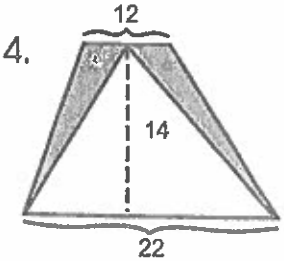
10. 

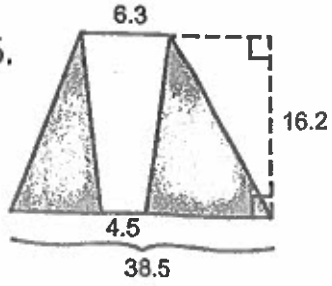
11. 

12. 

Find the area of the shaded region.

13. 

14. 

15. 

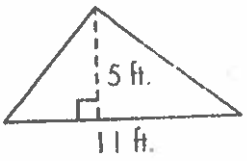
Name: _____ Date: _____ Period: _____

Directions: Using the correct formula for each shape find the area.

Find the area of each triangle below.

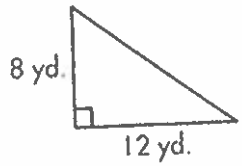
a

1.



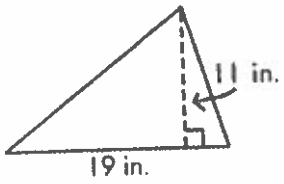
A = _____ sq. ft.

b



A = _____ sq. yd.

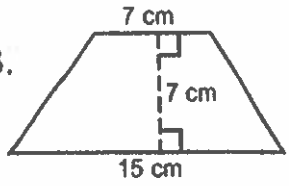
c



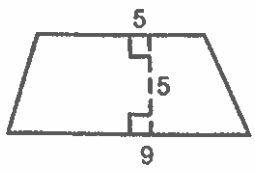
A = _____ sq. in.

Find the area of each trapezoid.

8.



12.

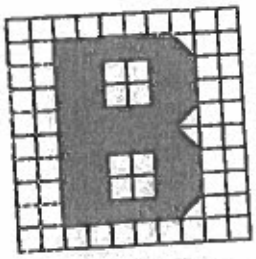


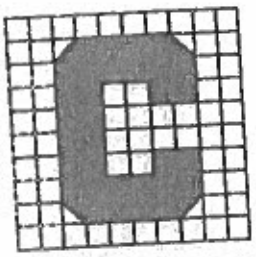
ame _____ Date _____

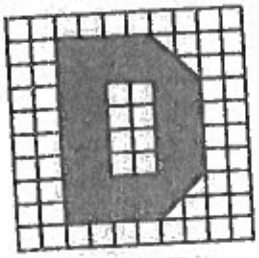
Area – By Any Other Name

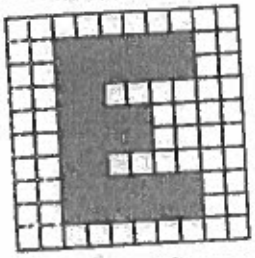
Let each ▪ represent 1 square unit. Find the area of each letter, then calculate the area of your name.

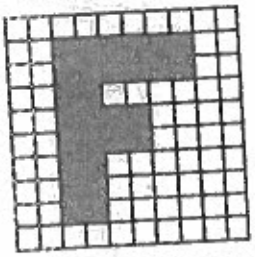
1. 

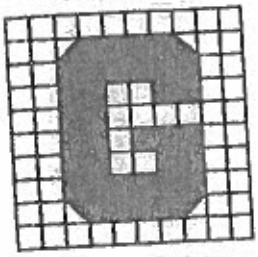
2. 

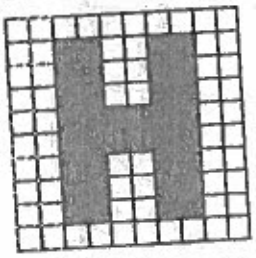
3. 

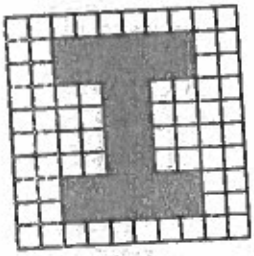
4. 

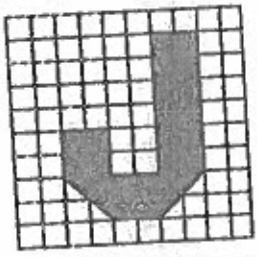
5. 

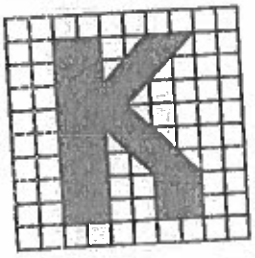
6. 

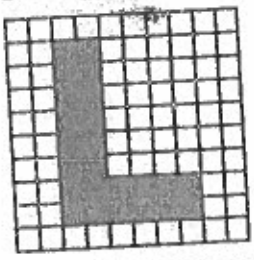
7. 

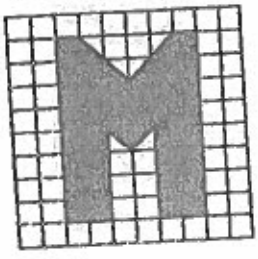
8. 

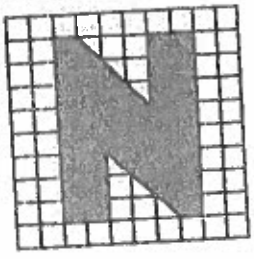
9. 

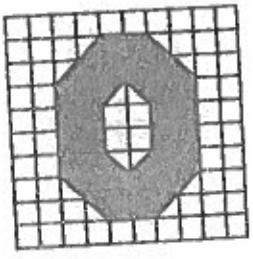
10. 

11. 

12. 

13. 

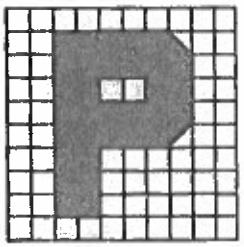
14. 

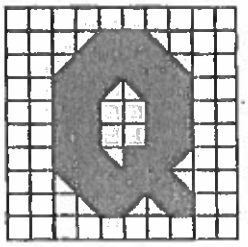
15. 

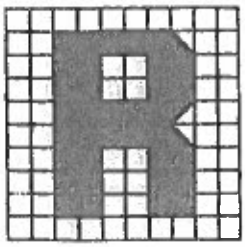
Name _____ Date _____

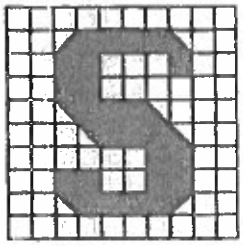
Area – By Any Other Name

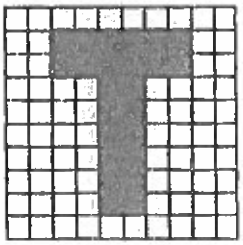
Let each ▪ represent 1 square unit. Find the area of each letter, then calculate the area of your name.

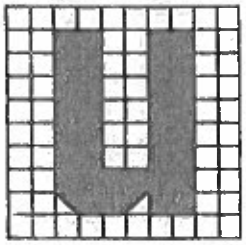
16. 

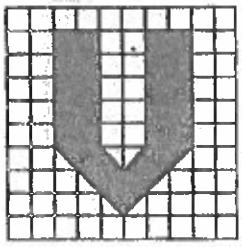
17. 

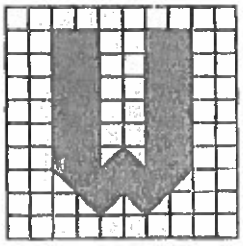
18. 

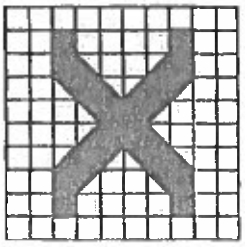
19. 

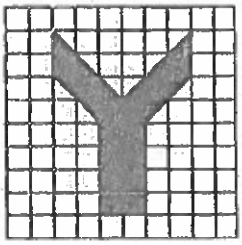
20. 

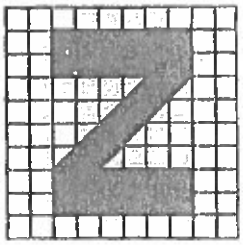
21. 

22. 

23. 

24. 

25. 

26. 

Write your first name: _____

Find the area of the letters: _____

Write your last name: _____

Find the area of the letters: _____

Name: _____

Review Video: Evaluate Formulas

Steps for writing an algebraic expression for word problems:

1. Locate the formula being used
2. Ask yourself, "What am I given and what am I trying to find?"
3. Substitute given values into the formula
4. Evaluate using order of operations
5. Check to make sure you answered the question being asked

1. The formula that is used to convert Fahrenheit (F) to Celsius (C) is $C = 5(F - 32) \div 9$. Convert 77°F to degrees in Celsius.

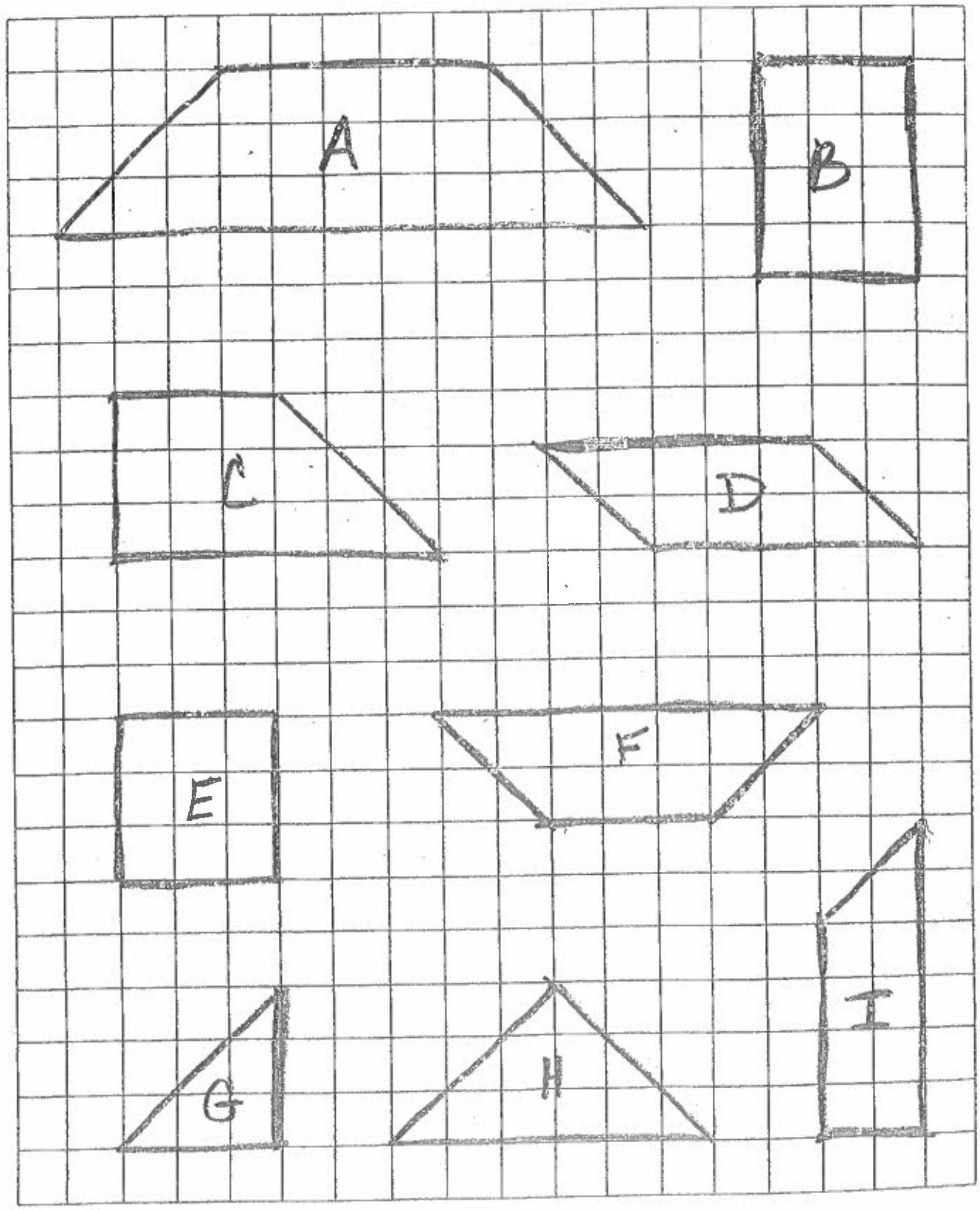
2. Find the total area of a rectangle tile using the formula $A = lw$ with the length of 6 in and width of 8 in.

3. Find the volume of a cubical packing box using the formula $v = s^3$ if the side length is 2 ft.

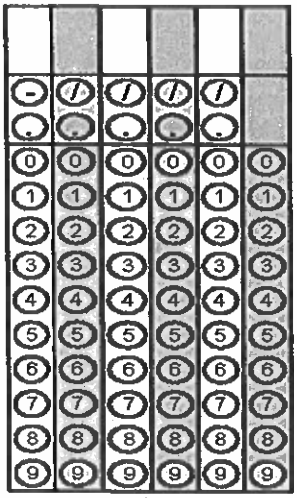
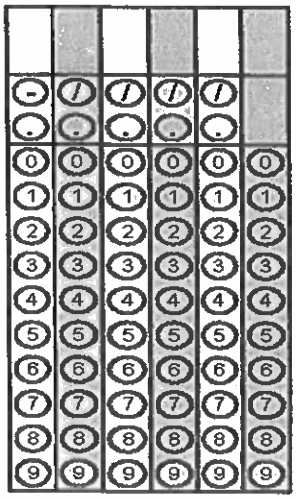
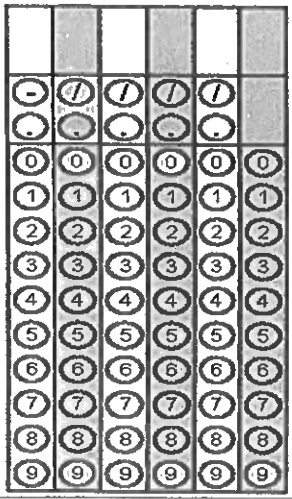
4. Ms. Li wants to make a rectangular garden. The length of the garden is 8ft and width of the garden is 7ft. Use the formula $P = 2l + 2w$ to find the perimeter of the garden.

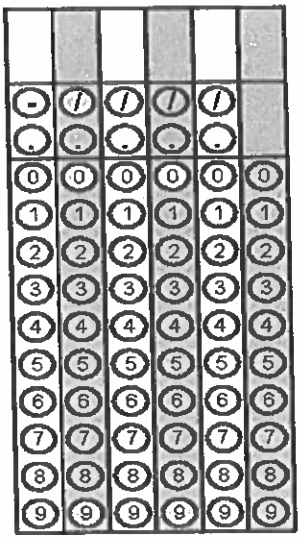
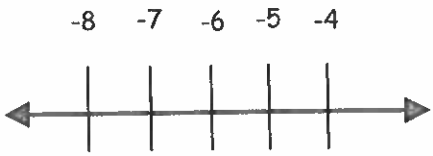
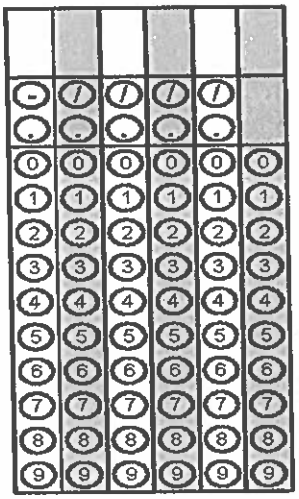
5. The speed limit on highway 85 increased from 55 mph to 65 mph. How much time will be saved on a 100-mile trip? Hint: $d = rt$

1-CENTIMETER GRID PAPER



CCM6 - Quarter 3 - Week 8

	Problem 1	Problem 2	Gridded Response
Monday	When driving to their grandparent's home, Max and Mindy's distance can be calculated using the formula $d = 68t$, where d represents distance traveled and t represents time. What is the constant of proportionality in this formula?	Solve for x. $5y + y + 6 + 2y + y + 9 = 24$	***Problem 2*** 
Tuesday	Tyson needs to decide which size pack of soda to purchase. A six-pack of soda costs \$3.99 and a twelve-pack is \$5.59. Which is the better deal?	Jasmine is buying birthday gifts for her triplet friends. She picks out character erasers for \$0.52 each. How much will Jasmine spend on the gifts for her friends?	***Problem 2*** 
Wednesday	Evaluate using order of operations. $3\times[(5 + 4)\times4] + 28 \div 4$	Complete the table for the rule $y = \frac{1}{6}x$. | x	y | |---|---| | 0 | | | 6 | | | 12 | | | | 4 |	***Problem 1*** 

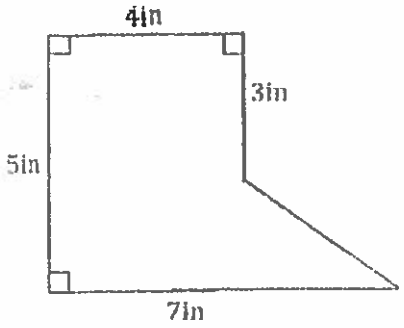
Thursday	Macy is hanging photos in her new home. She finds she can buy 2.1 pounds of hanging screws for $6.20. She only needs one pound of screws. How much will she pay?	Evaluate using order of operations. $3\{10 + [(9-4)\times(4-2)]\}$	***Problem 2*** 
Friday	Find the volume of a figure composed of two rectangular prisms. One prism has dimensions of 5 units, 2 units, and 4 units. The other prism has dimensions of 3 units, 2 units, and 4 units.	Write and graph the inequality for the expression "-5 is the least possible value." 	***Problem 1*** 

Unit 11 Video 4 Name _____ Date _____

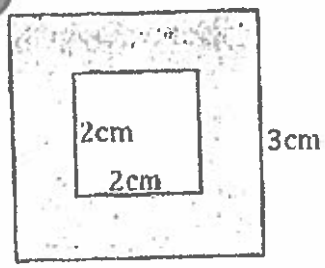
Finding Area of Polygons

Area Formulas		
Rectangle	Triangle	Trapezoid
$\text{Area} = bh$	$\text{Area} = \frac{1}{2}bh$	$\text{Area} = \frac{1}{2}h(b_1 + b_2)$

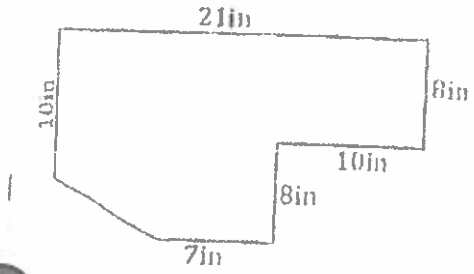
Ex 1) Find the area of the polygon.



Ex 2) Find the area of the shaded part. Both shapes are squares.

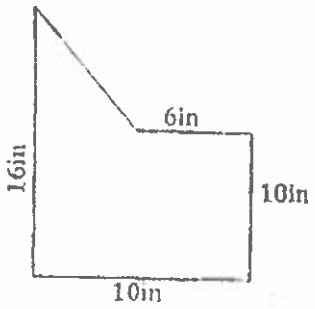


Ex 3) Find the area of the polygon.

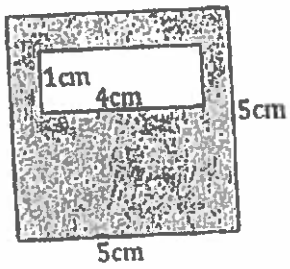


In Class Practice Problems:

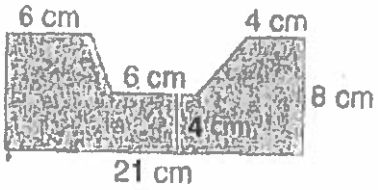
1) Find the area of the polygon.



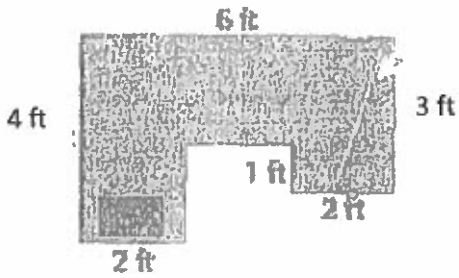
2) Find the area of the shaded part.



3) Find the area of the polygon.



4) Find the area of the polygon.

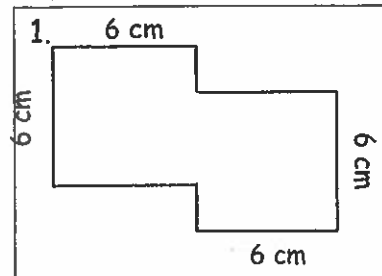


Name _____ Date _____

Decomposing Polygons to Find Area

Directions: Decompose each polygon into rectangles and triangles to find the area.

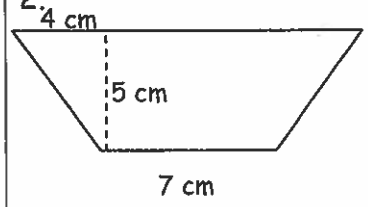
1. Section the shape into rectangles and/or triangles.
2. Find the area of each rectangle and triangle.
3. Find the total area of the polygon.

1. 

Section into rectangles **or** triangles.

Work Space

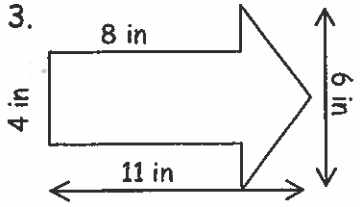
Total Area=

2. 

Section into rectangles **or** triangles.

Work Space

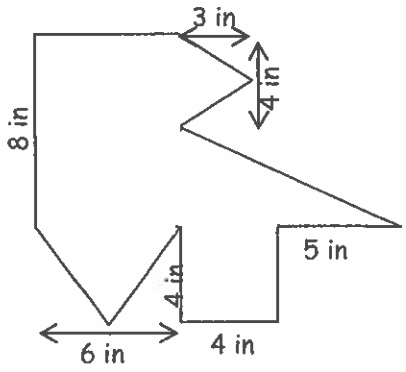
Total Area=

3. 

Section into rectangles **or** rectangles

Work Space

Total Area=

4. 

Section into rectangles **or** triangles.

Work Space

Total Area=

5. Create your own polygon. You will need to be able to divide your polygon into at least 3 triangles and/or rectangles. Solve.

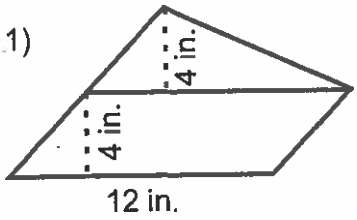
Total Area=

Name_____ Date_____

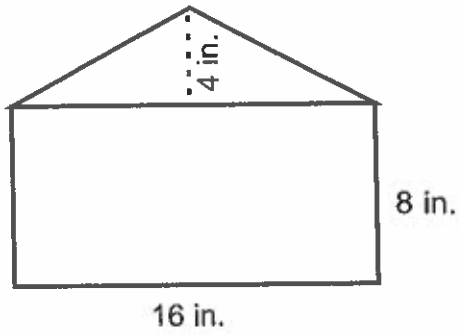
Area Of Combined Shapes

Directions: Find the area of each of the figures shown. For each problem, find the area of the each shape separately and add the area of each shape together.

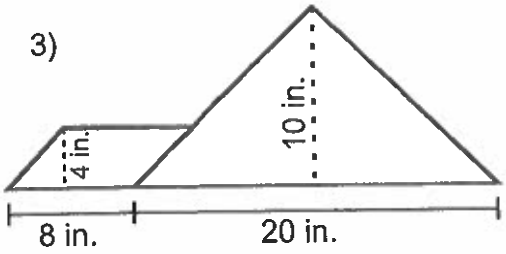
1)



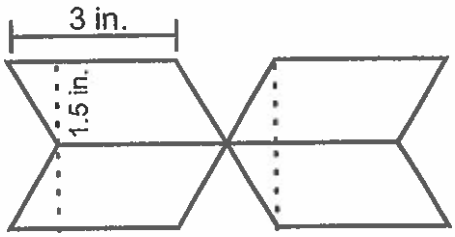
2)



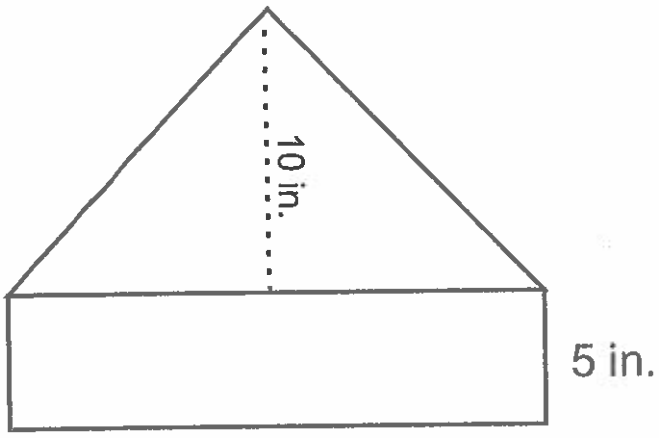
3)



4)



5)



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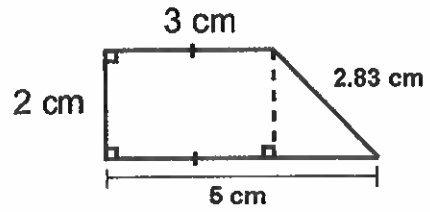
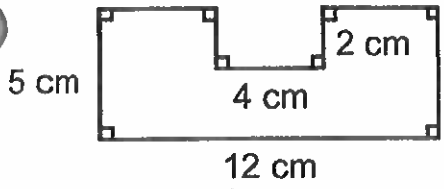
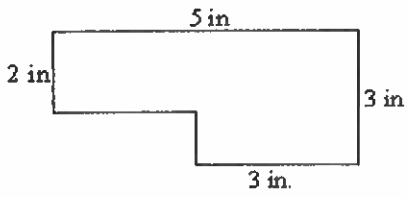
ID# 0186

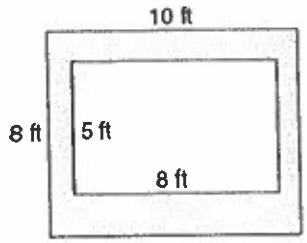
Name: _____

Unit 11 Video 5: Area of Composite and Shaded Figures

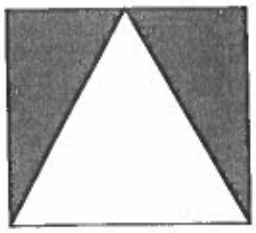
Composite Figure:

Figure	Area
1. 	
2. 	
3. 	

4.



5.

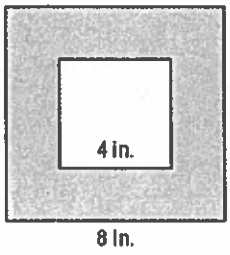


6 in

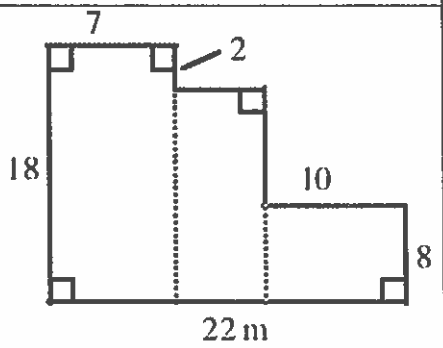
6 in

Notes - 2D Irregular Figures

Find the area of the shaded region of each of the following figures.



Find the Area and Perimeter of the entire figure.

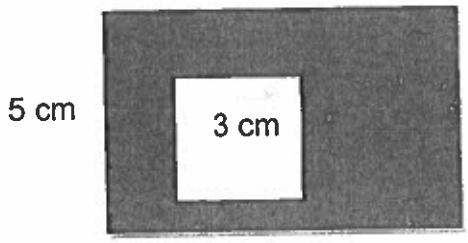


Name: _____
Date: _____ Period: _____

Inscribed Figures

Find the area of the shaded portion of the following figures:

1.

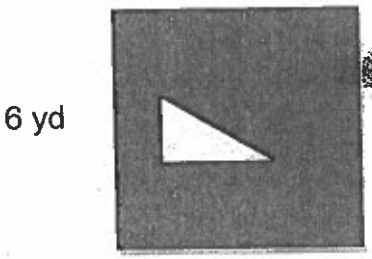


Area of rectangle: _____

Area of square: _____

Area of shaded region: _____

2.



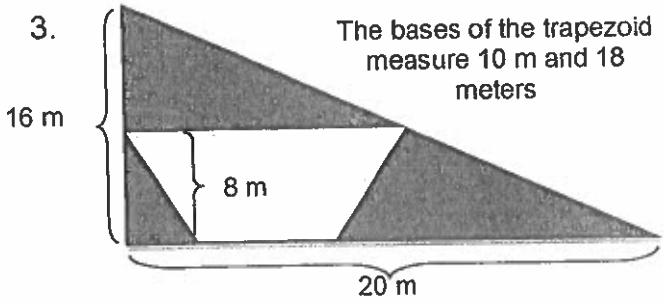
Triangle has a base of 3 yd and a height of 2 yd.

Area of square: _____

Area of triangle: _____

Area of shaded region: _____

3.



The bases of the trapezoid measure 10 m and 18 meters

Area of triangle: _____

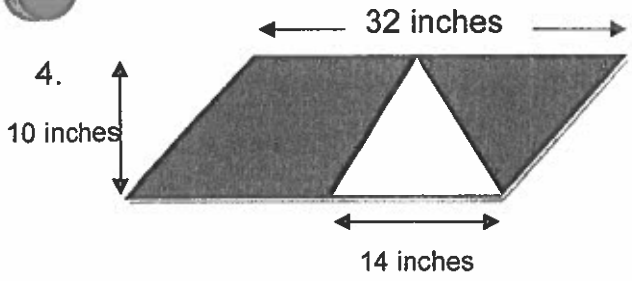
Area of circle: _____

Area of shaded region: _____

Name: _____

Date: _____ Period: _____

4.

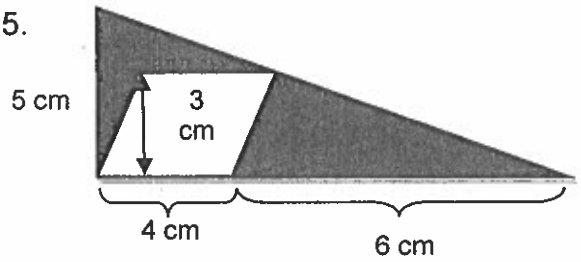


Area of parallelogram: _____

Area of triangle: _____

Area of shaded region: _____

5.



Area of triangle: _____

Area of parallelogram: _____

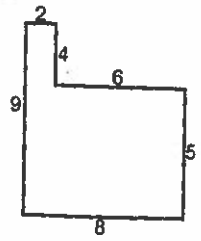
Area of shaded region: _____

Name: _____

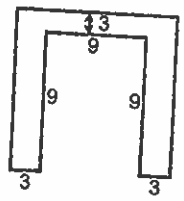
Date: _____ Period: _____

Find the the total area of each figure: 1) Divide each figure into rectangles; 2) Find the area of each rectangle; 3) Add the areas.

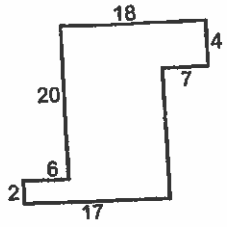
(1)



(2)

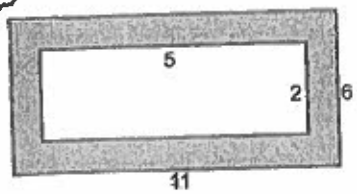


(3)

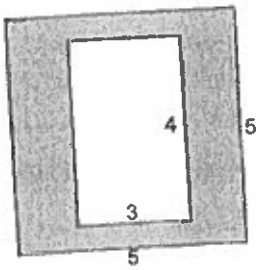


Find the area of the shaded region.

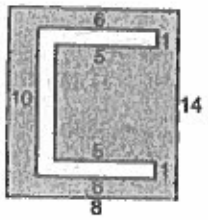
(4)



(5)

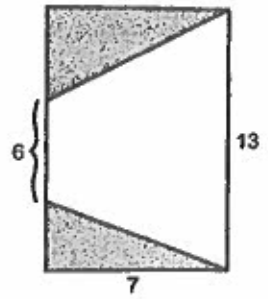


(6)

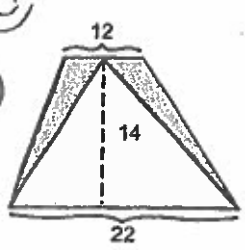


Find the area of the shaded region.

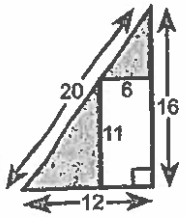
7)



8)



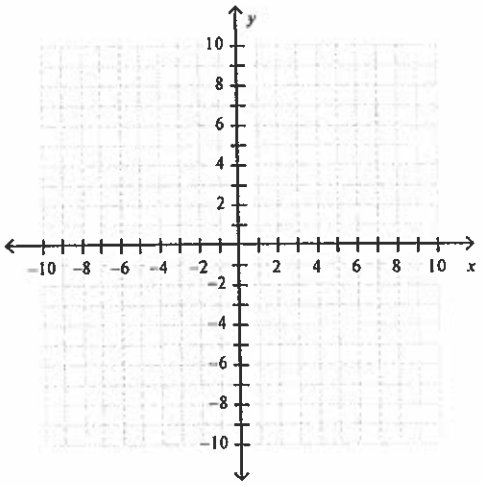
9)



Unit 11 Video 6 Notes Name _____ Date _____

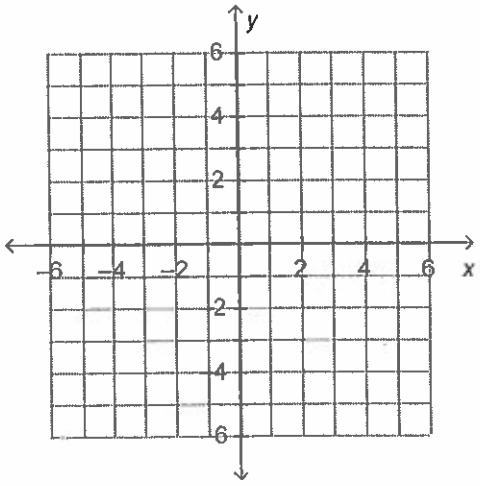
Distance and Area in the Coordinate Plane

Ex 1) Plot and connect the points to form a rectangle. Then find the length, width, and area of the rectangle. $A(8, -3)$, $B(8, 2)$, $C(4, 2)$, $D(4, -3)$

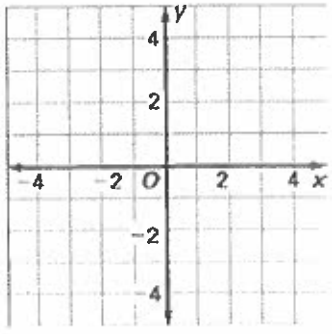


Length: _____ Width: _____ Area: _____

Ex 2) Conner draws a parallelogram. Three of the vertices are located at (-6,4), (-3,1), and (2,1). Add the fourth point to draw the parallelogram.



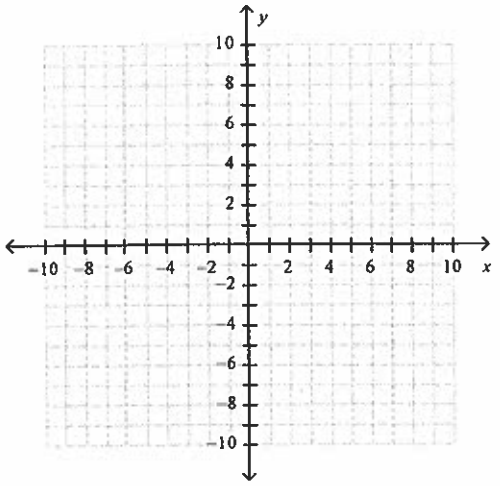
Ex 3) Graph the triangle with vertices $(-1, -1)$, $(-1, 3)$ and $(3, -1)$. Find the area of the triangle.



Area: _____

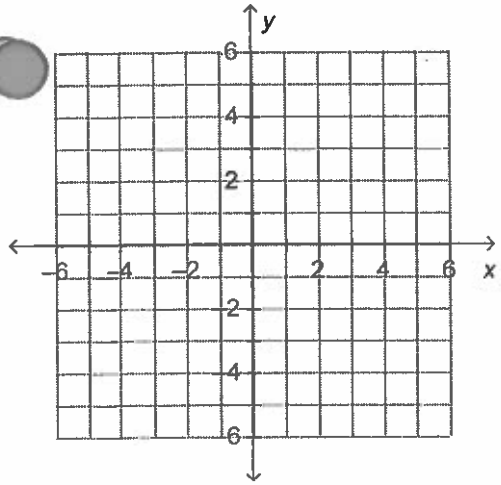
Practice Problems

1) Plot and connect the points to form a rectangle. Then find the length, width, and area of the rectangle.
$(-6,-1)$, $B(7,-1)$, $C(7,-7)$, and $D(-6,-7)$.

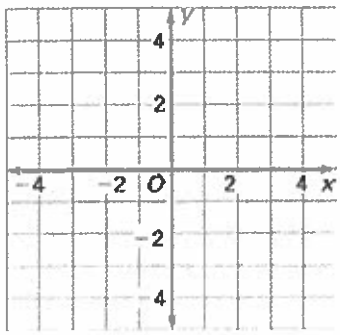


Length: _____ Width: _____ Area: _____

2) Caleb draws a parallelogram. Three of the vertices are located at (-4,5), (2,5), and (4,-3). Add the fourth point to draw the parallelogram.



3) Graph a triangle whose vertices are (-1, 2) , (-1, -4), and (4, -4). Find the area of the triangle.



Area:_____

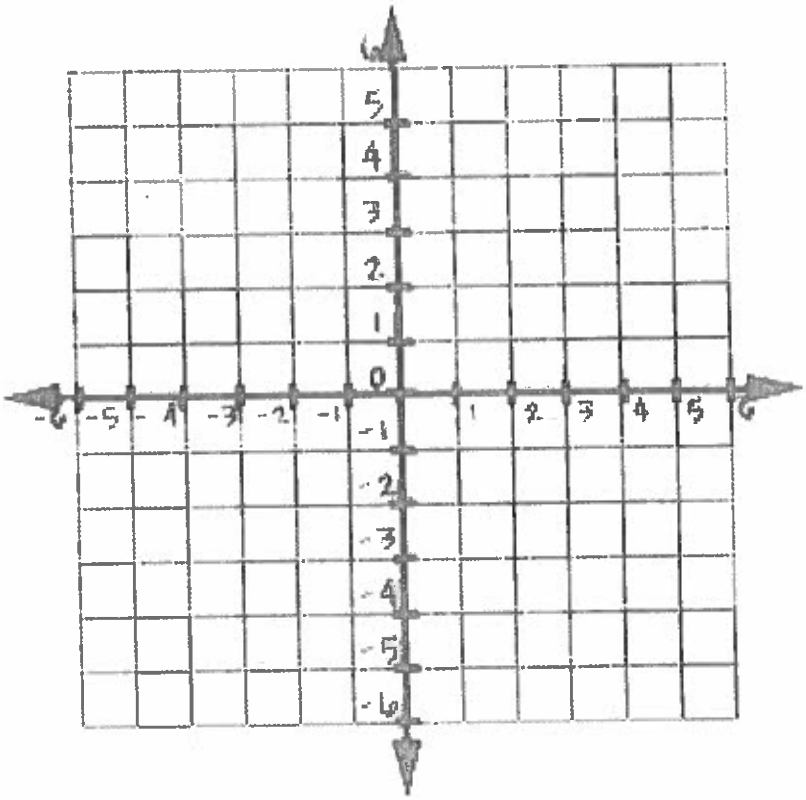
Name:_____ Period:_____ Date:_____

Perimeter & Area in the Coordinate Plane

For each problem:

- Plot the ordered pairs in the coordinate plane given
- Find the perimeter of the figure
- Find the area of the figure
- Find the distance between each point by using the absolute value method.

1. G (-4, 5) H (5, 5) I (-4, -5) J (5, -5)

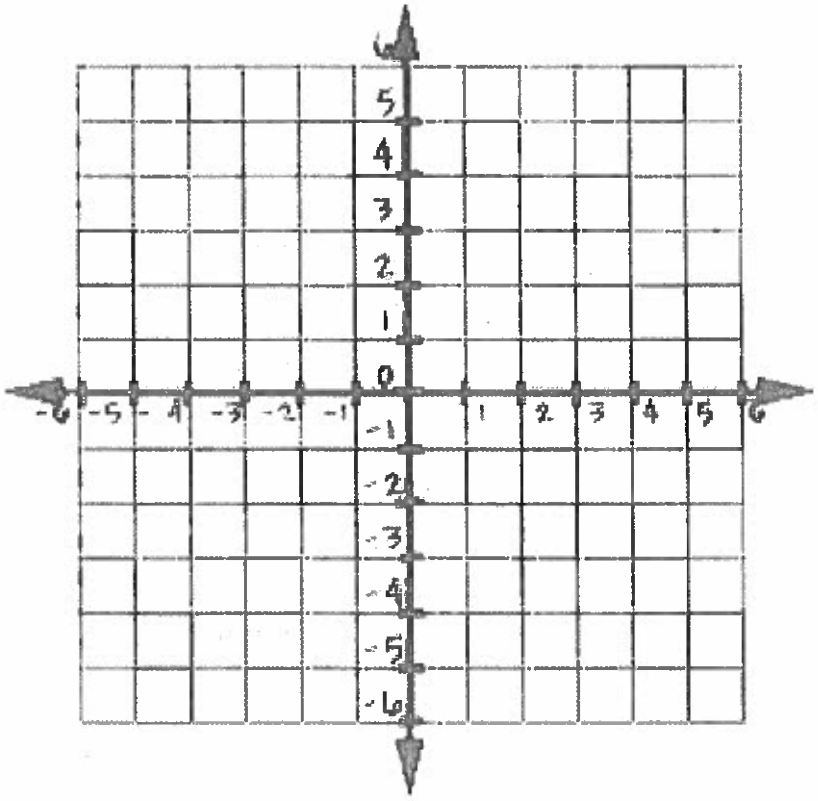


Perimeter of GHIJ:_____ Area of GHIJ:_____

Question 3 was taken from the 6th Grade Mathematics Unpacked Content produced by DPI

2. This figure is a four sided polygon. Before finding the area and perimeter find the missing point.

R (-2, 2) S (4, 2) T (,) U (-2, -3)



Perimeter of RSTU:_____ Area of RSTU:_____

What was the fourth vertex?

How did you find the length for each side of the figure?

Question 3 was taken from the 6th Grade Mathematics Unpacked Content produced by DPI

3. On a map, the library is located at (-2, 2), the city hall building is located at (0,2), and the high school is located at (0,0).

   Represent the locations as points on a coordinate grid with a unit of 1 mile.

- What is the distance from the library to the city hall building? The distance from the city hall building to the high school? How do you know?

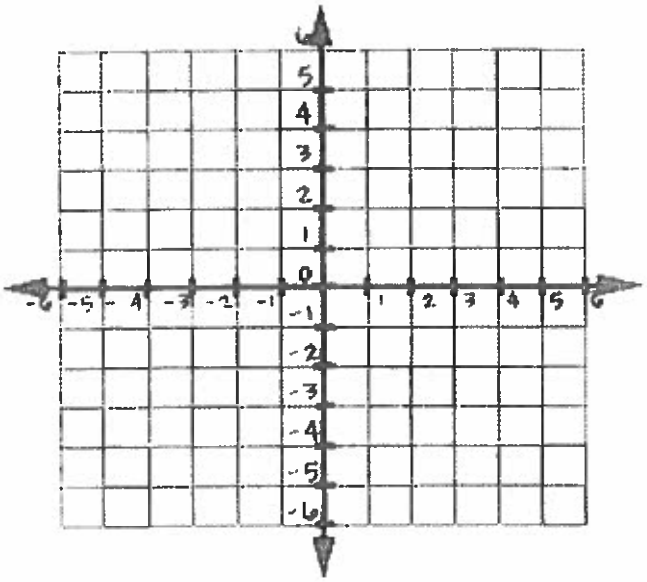
- What shape does connecting the three locations form? The city council is planning to place a city park in this area. How large is the area of the planned park?

Question 3 was taken from the 6th Grade Mathematics Unpacked Content produced by DPI

Name:_____ Date:_____ Period:_____

Exit Ticket: Please work through the following scenario.

Josh plotted the points A(1, 2), B(1, -4), C(4, -4), D(4, 2) and determined the area to be 21 units^2 and the perimeter to be 20 units. Is he correct? If not, explain and solve for the correct answer.

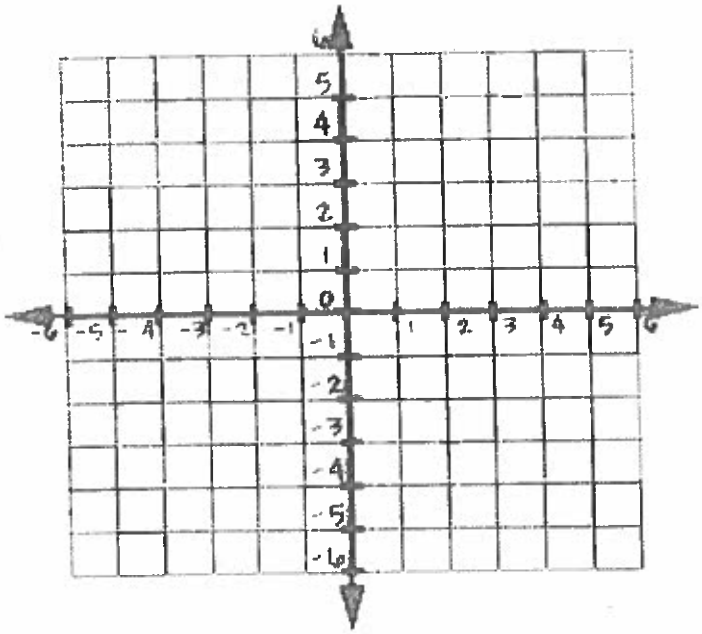


Unit 11 Video 7
Absolute Value Distance to Perimeter & Area

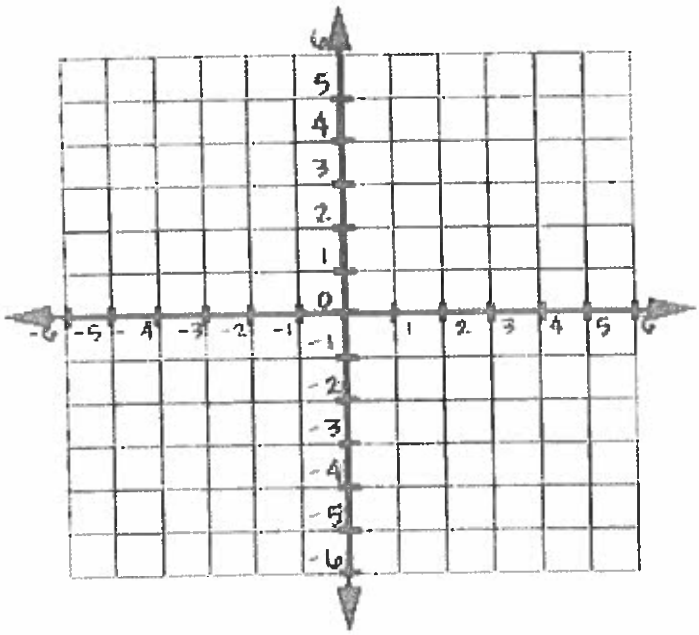
Name: _____
Date: _____ Core: _____

Guided Practice: Use the accompanying coordinate planes to graph each geometric shape, then decompose if necessary and finally apply absolute distance to perimeter and area formulas to find the area and perimeter of each shape.

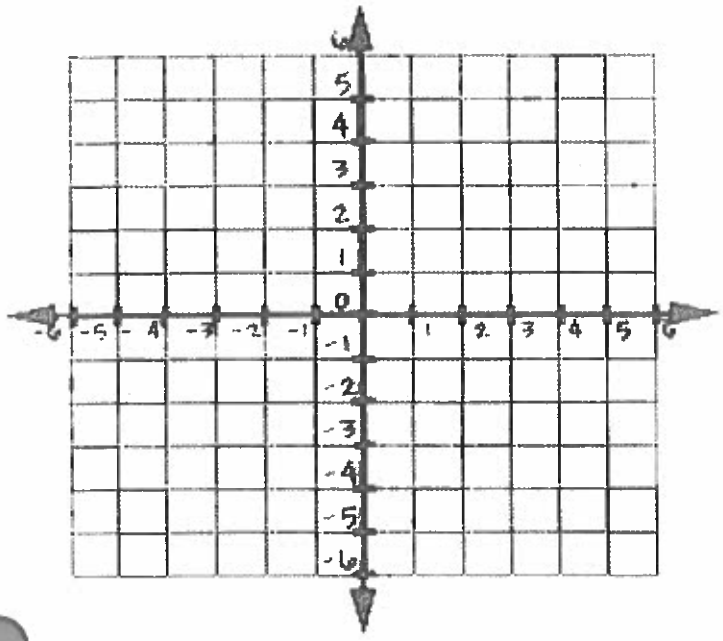
1. Mr. Garcia's garden is located with the following coordinates: (-3,3), (2,3), (2,-4), (-2,-4), (-2,1), and (-3,1). If each unit is one yard, how many yards of fencing will be needed? And how many square yards of garden will need mulching?



2. Ms. Brown's driveway is located within the following coordinates: (-4,3), (-3,3), (-3,2), (1,2), (1,3), (4,3), (4,-2) and (-4,-2). If each unit is one meter, how many meters of border will be needed? And how many square meters of driveway will need asphalt?

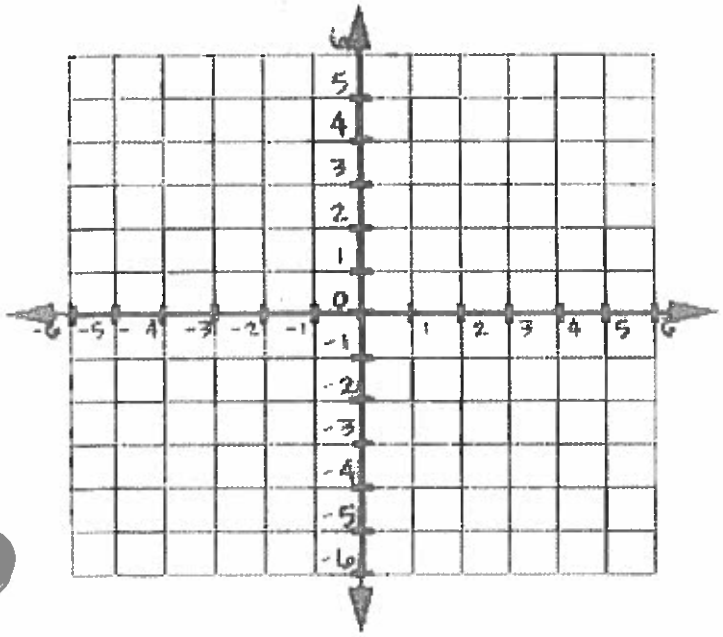


3. Mr. Lee is mulching around his prize miniature maple tree. The tree's coordinates are (-1,0) and the extent of the mulch will reach the coordinates of (2,0). The mulched area will create a circular area around the tree. How many square feet will need to be mulched, and how many feet of decorative fencing will be needed to go around the mulch? CCM6 Students are not expected to know the formulas for circles, but should be able to use a formula when given. Area of a circle = πr^2 and the distance around the circle is Circumference = $2\pi r$.



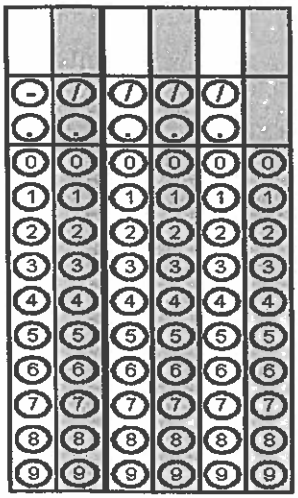
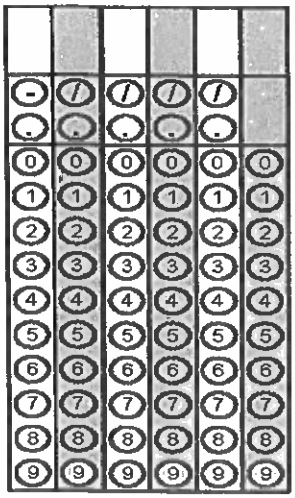
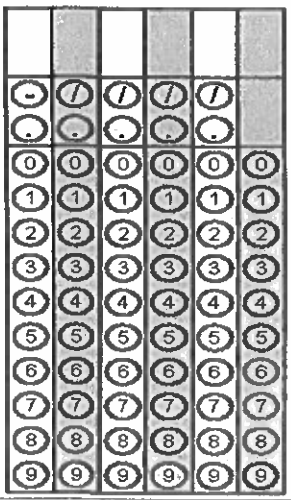
CHALLENGE PROBLEM

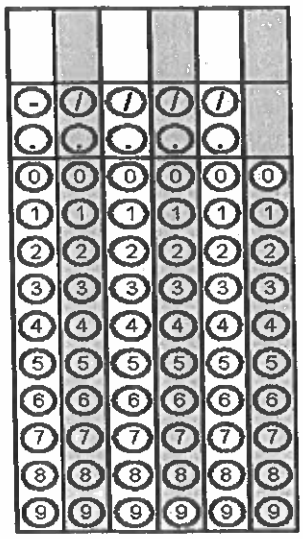
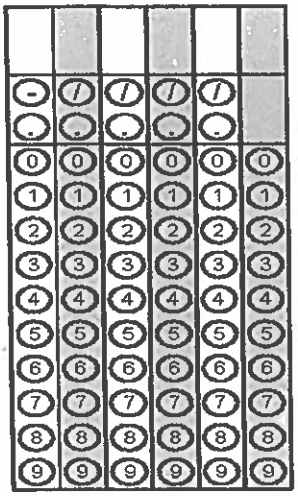
4. Mrs. Wilson wants a triangular-shaped dog run that will be contained within the following coordinates: (-3,1), (1,-4), and (-3,-4). How many square yards of lawn will need extra fertilizer, and how many yards of invisible fencing will need to be installed?



Additional Notes Page

CCM6 - Quarter 3 - Week 9

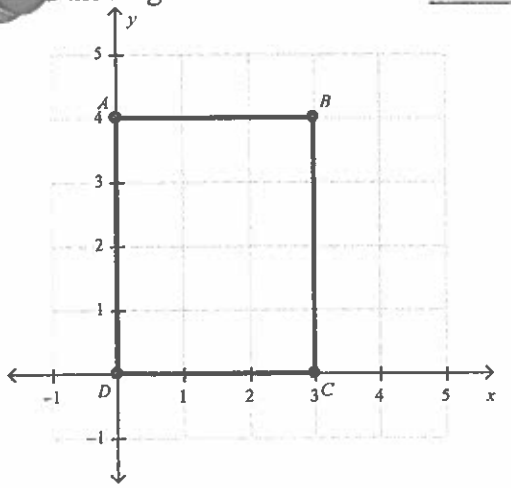
	Problem 1	Problem 2	Gridded Response
Monday	Jodi's grandpa makes the best white chocolate chip cookies. His recipe calls for $\frac{1}{2}$ cup of white chocolate chips for every $1\frac{3}{4}$ cup of flour. How many cups of white chocolate chips will be needed if $3\frac{1}{2}$ cups of flour are used?	Evaluate. $\left(\frac{3}{5}\right)^3$	Problem 1 
Tuesday	Evaluate $4x + 3y$ if $x = 4.1$ and $y = 0.05$.	If the ratio of baseball players to softball players at West Middle School is 4:5, how many softball players are there if there are 12 baseball players?	Problem 2 
Wednesday	Which is larger: the quotient of $\frac{2}{3}$ and $\frac{4}{9}$ or the product of $\frac{2}{3}$ and $\frac{4}{9}$?	How many $\frac{1}{4}$ cup servings are there in 10 cups of cereal?	Problem 2 

Thursday	The Honor Society at Blythe Middle is planting flowers in the 6 flower beds around the school. If each flower takes up $\frac{1}{8}$ of a garden, how many flowers will the students be able to plant in the flower beds?	Josephine received $60 for her birthday. She spent $45 at Save a Lot. She decided she didn't like an $18 shirt she bought so she returned it. When she got home she had another birthday card with a $35 check inside. The next day she bought a $23 pair of jeans from Jeans Galore. She spent $7 at Pizza Palace for lunch. When she went home her aunt had dropped off a birthday check for $25. How much of her birthday money does she have now?	***Problem 1*** 
Friday	Find the volume of a shape consisting of two rectangular prisms. One prism has dimensions of 4cm, 8cm, and 6 cm. The other prism has dimensions of 4 cm, 10 cm, and 3 cm.	Simplify. $3(x + 4) + 2(6 + 3x)$	***Problem 1*** 

Name _____

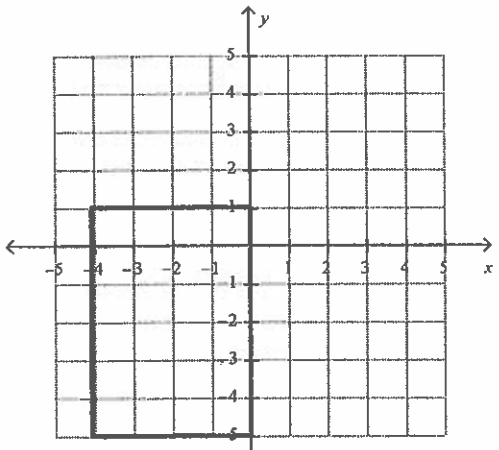
Unit 11: Area of Quadrilaterals with Graphing Practice

1. Find the length of $\overline{CD}$. Answer: _____

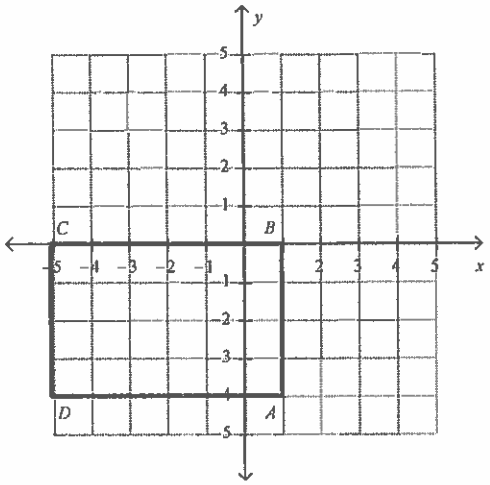


2. Square $ABCD$ has vertex A at point $(15, 14)$ and vertex B at point $(15, 15)$. Find the length of a side of the square.
   a. 1 unit
   b. 14 units
   c. 30 units
   d. 15 units

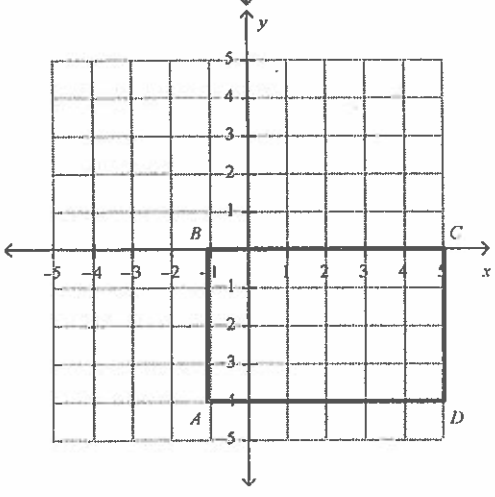
3. Graph the rectangle with vertices $A(-1, -4)$, $B(-1, 0)$, $C(5, 0)$, and $D(5, -4)$.



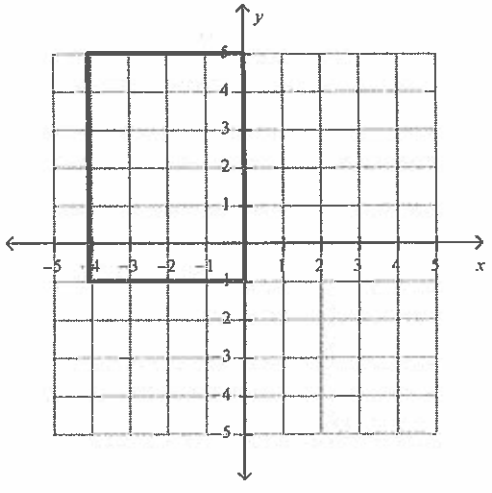
c.



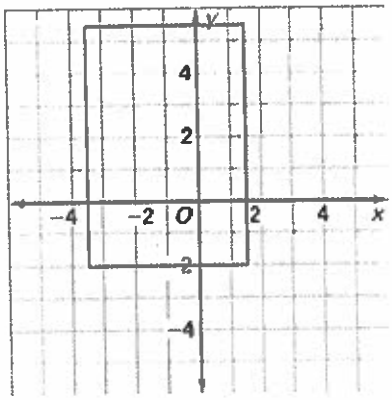
b.



d.



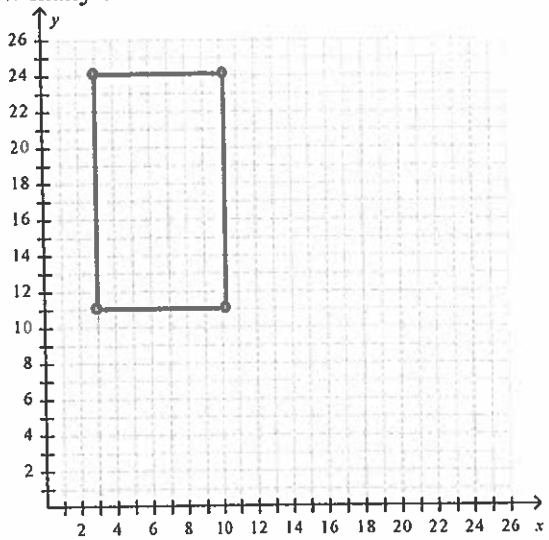
4. Find the perimeter of the rectangle. Answer: _____



5. Suppose that all blocks in a city are the same length. Streets run north and south. They are numbered consecutively, starting with First Street. Avenues run east and west. They are also numbered consecutively, starting with First Avenue.

Jerome lives at the corner of Third Street and Twenty-Fourth Avenue. He walks to the bank at Third Street and Eleventh Avenue, to the post office at Tenth Street and Eleventh Avenue, and then to the barbershop on Tenth Street and Twenty-Fourth Avenue. Then Jerome walks home.

How many blocks does Jerome walk?

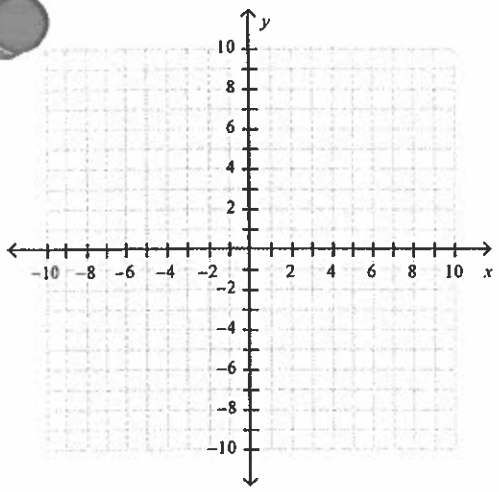


a. 20 blocks
b. 40 blocks
c. 91 blocks
d. 96 blocks

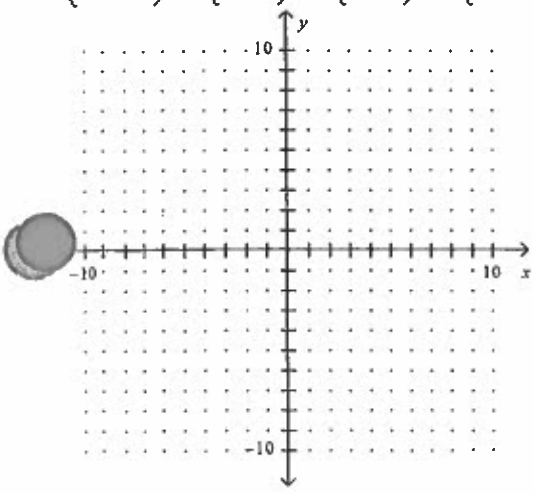
6. A rectangular plot of land is represented on a map by the vertices (10, 10), (10, 90), (70.5, 90), and (70.5, 10), where the x- and y-coordinates are measured in yards. What is the area of the plot of land?

a. $1,560\ \text{yd}^2$
b. $4,840\ \text{yd}^2$
c. $5,445\ \text{yd}^2$
d. $6,345\ \text{yd}^2$

7. Graph the quadrilateral with the coordinates $(-6,-1)$, $(7,-1)$, $(-6,-7)$, and $(7,-7)$.

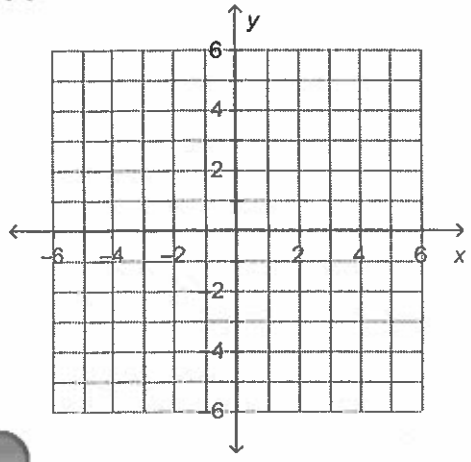


8. Plot and connect the points to form a rectangle. Then find the length, width, and area of the rectangle.
$A(8, -3)$, $B(8, 2)$, $C(4, 2)$, $D(4, -3)$



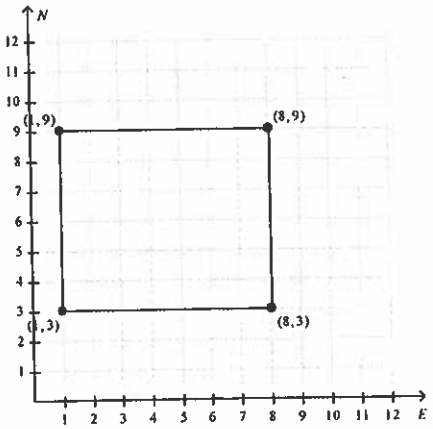
Length: _____ Width: _____ Area: _____

9. Graph the shape that has vertices $A(-3, -2)$, $B(-1, 2)$, $C(4, 2)$, and $D(2, -2)$. What kind of shape is it?



Shape: _____

10. The graph shows the path that Karis bicycled on Thursday. Each unit represents 1 mile. She bicycles north, then east, then south, and finally west to return to the same starting point at (1, 3).



On Saturday, Karis starts at (1, 3), but bicycles 4 more miles north and 5 more miles east, along a similar rectangular path. She determines that she rode an additional $4 + 5 = 9$ miles. Is Karis correct? Explain. Draw a graph to illustrate Karis's path on Saturday.

11. A rectangle has one vertex at (0, 4). The rectangle has at least one side with a length of 6 units. Which vertices could represent the other three vertices of the rectangle?

a. (0, − 2), (−2, − 2), and (−2, 4)
b. (3, 4), (3, 1), and (0, 1)
c. (6, 4), (0, 2), and (6, 2)
d. (−6, 4), (0, 5), and (−6, 5)
e. (0, 6), (2, 6), and (2, 4)

12. A quadrilateral has vertices $W(3, 7)$, $X(3, 1)$, $Y(9, 1)$ and $Z(9, 7)$.
Is the quadrilateral:

- a square,
- a rectangle that is not a square,
- a rhombus that is not a square,
- a parallelogram that is neither a rhombus nor a square, or,
- a quadrilateral that is not a square?

Justify your answer without using a graph.

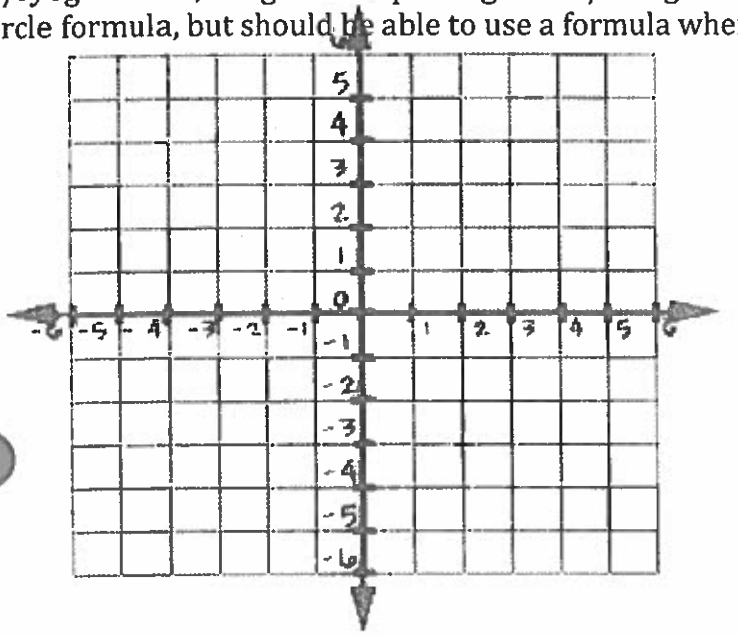
Unit 11 Video 8
Absolute Value Distance to Irregular Areas

Name: _____
Date: _____ Core: _____

Guided Practice: Use the accompanying coordinate planes to graph each geometric shape. Next, ask yourself, "what do I want to know?" followed by, "what do I already know?" Then ask, "How can I use what I know to find out, what I don't know?"

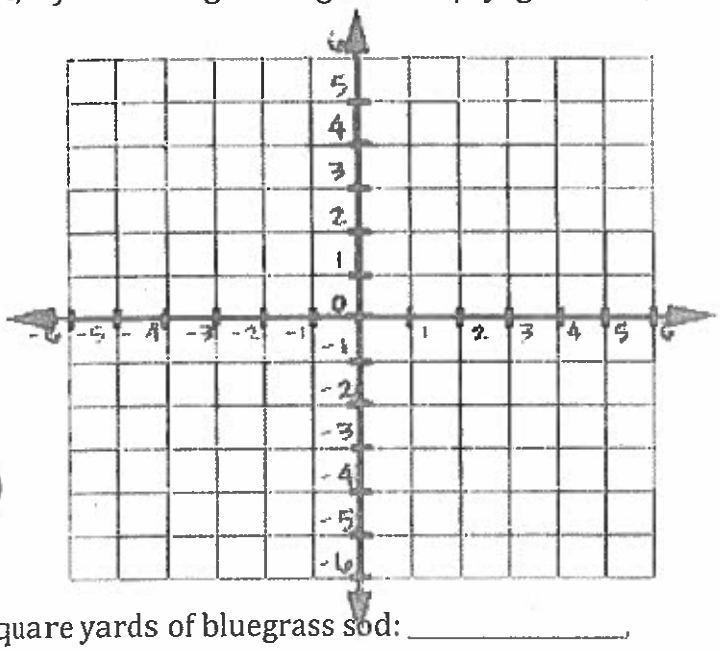
Prompt: Duke Gardens has hired a landscaper to create different geometric patterns in their lawns by planting Kentucky Bluegrass and Ryegrass sod at specific locations throughout their campus. Find out the square yardage needed for both types of sods at each of the following campus sites.

Site #1 Rectangle at (-3,1), (3,1), (3,-1), and (-3,-1). Circle center points at (-2,0), (0,0), and (2,0). *The circumference of circles extends to the perimeter of the rectangle, but not beyond. Circles are filled w/ryegrass sod, irregular-shaped regions w/bluegrass. CCM6 Students are not expected to know the circle formula, but should be able to use a formula when given. Area of a circle = πr^2.



square yards of bluegrass sod: _____, square yards of ryegrass sod: _____.

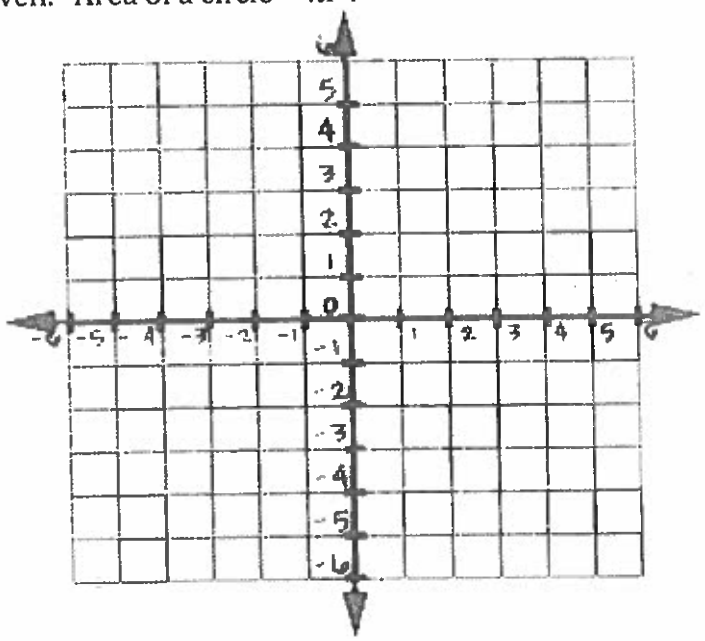
Site #2 Rectangle at (-4,2), (3,2), (3,-2), and (-4,-2). Diagonal parallelogram at (0,2), (3,2), (-1,-2), and (-4,-2). *The diagonal region fill w/ryegrass sod, triangles fill w/bluegrass.



square yards of bluegrass sod: _____, square yards of ryegrass sod: _____.

Site #3

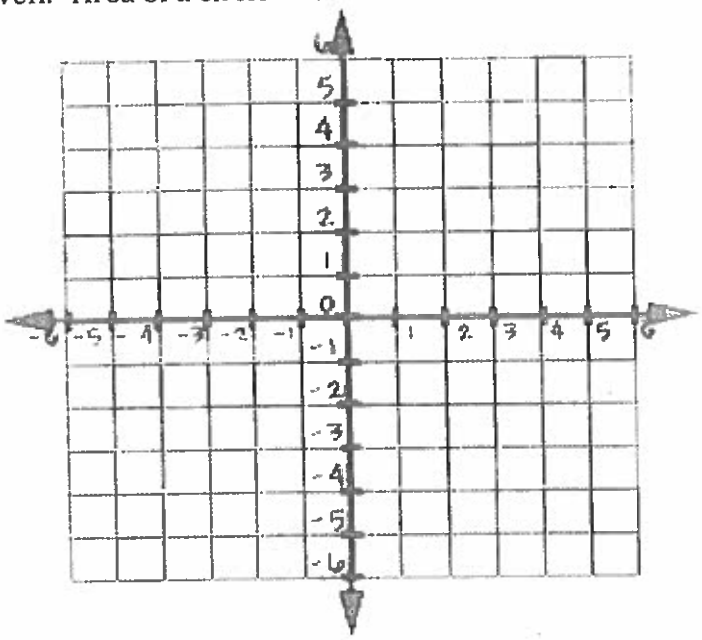
Square at (-2,2), (2,2), (2,-2), and (-2,-2). Circle center point at (0,0). *The circumference will extend to the perimeter of square, but not beyond. Circular region fill w/bluegrass, corner regions fill w/ryegrass. CCM6 Students are not expected to know the circle formula, but should be able to use a formula when given. Area of a circle = πr^2.



square yards of bluegrass sod: _____, square yards of ryegrass sod: _____.

Site #4

Rectangle at (-4,2), (2,2), (2,-2), and (-4,-2). Circle center point at (2,0). *The radius of circle will be 2 units (yards.) Circular region fill w/ryegrass, irregular-shaped region fill w/bluegrass.
CCM6 Students are not expected to know the circle formula, but should be able to use a formula when given. Area of a circle = πr^2.

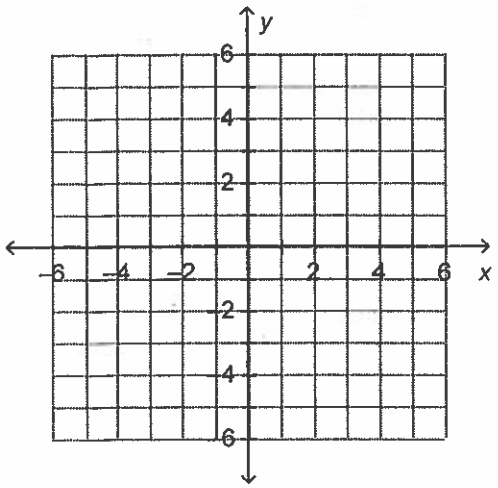


square yards of bluegrass sod: _____, square yards of ryegrass sod: _____.

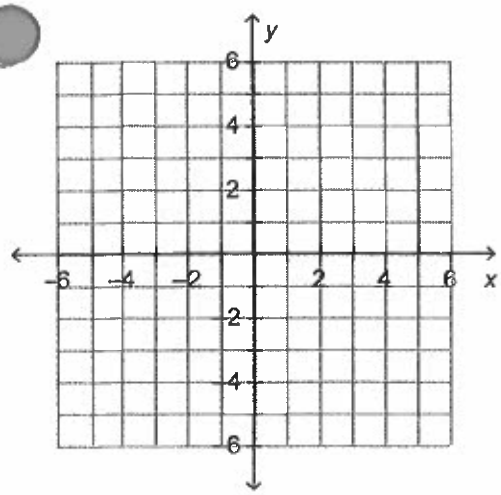
Name: _____ Date: _____ Period:_____

Tuesday Exit Ticket

8. Konrad draws a parallelogram. Three of the vertices are located at (-3,4), (-1,1), and (5,1). Add the fourth point to draw the parallelogram.

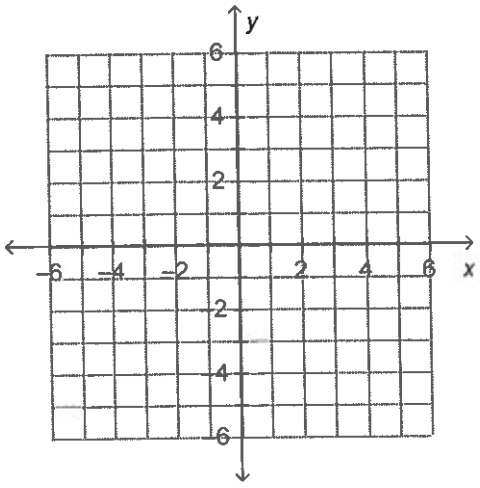


9. Holly draws a rectangle. Two of the vertices are (-4,5) and (5,5). The perimeter of the rectangle is 28 units. Draw a possible rectangle that could be Holly's.



10. A set of points is shown. Graph and connect the points below on the graph. Circle all the possible quadrilaterals that you can use to identify this shape.

(-4, 3.5), (-4, -2), (3, 3.5), (3, -2)



A. Rectangle

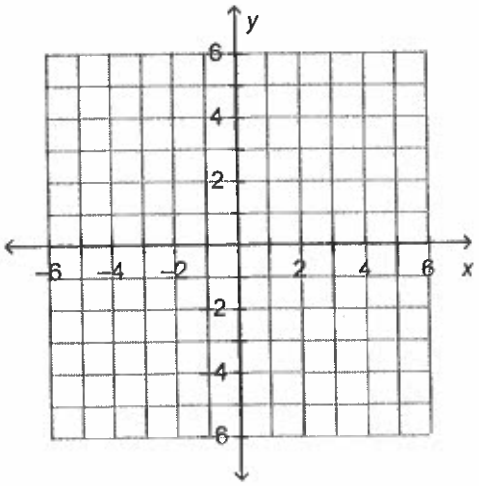
B. Square

C. Parallelogram

D. Trapezoid

E. Rhombus

11. A set of points is shown. Graph and connect the points below on the graph. Find the length, width, area, and perimeter of the quadrilateral. (-5, 2) (-5, 6) (3, 6) (3, 2).



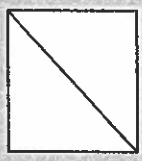
Length:_____

Width:_____

Area:_____

Perimeter:_____

Mathematical Tasks

Building a Collage- 6.G.1	
Domain	**Geometry**
Cluster	**Solve real-world and mathematical problems involving area, surface area, and volume.**
Standard(s)	**6.G.1** Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
Materials	Activity sheet
Task	**Building a Collage** Mrs. Hernandez' class is building a rectangular collage out of identical right triangles that they are putting together. Part 1: If the collage has a width that is as small as 7 feet and as large as 7 1/2 feet long and has a height as small as 11 ¼ feet and as great as 12 1/4 feet what are the minimum and maximum areas of the collage? Explain how you found your answer. Part 2: Two triangles are connected to make small rectangles like the picture below. If each row contains8 small rectangles and each column contains 4 small rectangles draw the entire collage.  Part 3: Based on the information in Part 2, what could the minimum and maximum dimensions and areas of each triangle be? Explain how you found your answer.

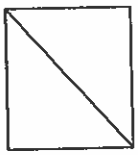
Mathematical Tasks

Building a Collage

Mrs. Hernandez' class is building a rectangular collage out of identical right triangles that they are putting together.

Part 1:
If the collage has a width that is as small as 7 feet and as large as 7 1/2 feet long and has a height as small as 11 ¼ feet and as great as 12 1/4 feet what are the minimum and maximum areas of the collage? Explain how you found your answer.

Part 2:
Two triangles are connected to make small rectangles like the picture below. If each row contains8 small rectangles and each column contains 4 small rectangles draw the entire collage.



Part 3:
Based on the information in Part 2, what could the minimum and maximum dimensions and areas of each triangle be? Explain how you found your answer.

6th Unit 11 – Area and Perimeter
Performance Task 3

Standard(s) Addressed:

6.G.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Standards for Mathematical Practice:

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.4 Model with mathematics.

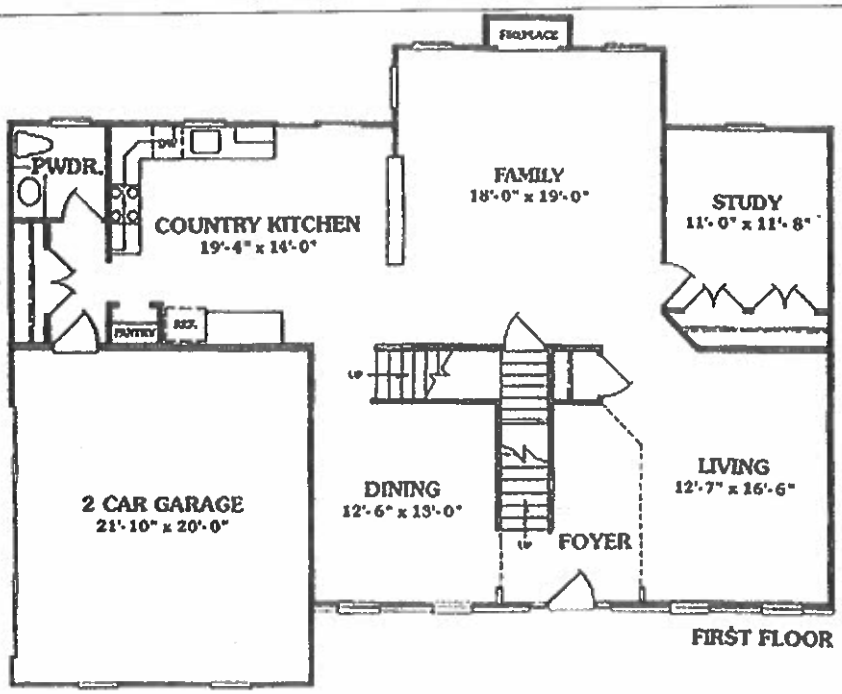
MP.5 Use appropriate tools strategically.

MP.6 Attend to precision.

Task:

Your task is to design your dream home floor plan (1st floor only) like the one below. Your home must include the following:

Rooms	Requirements
1. Garage 2. Living Room 3. Family Room 4. Kitchen 5. Bathroom 6. Dining Room 7. Study/Other room	1. At least one room must be a trapezoid 2. At least one room must be a square 3. At least one room must be a right triangle 4. Two rooms with complex shapes (more than two shapes combined to make the room) 5. Label the dimensions for each room (must be realistic – use the image below for a reference) 6. Find the total area for the first floor of the home


FIREPLACE
PWDR.
COUNTRY KITCHEN
19'-4" x 14'-0"
FAMILY
18'-0" x 19'-0"
STUDY
11'-0" x 11'-8"
PANTRY
REF.
2 CAR GARAGE
21'-10" x 20'-0"
DINING
12'-6" x 13'-0"
FOYER
LIVING
12'-7" x 16'-6"
FIRST FLOOR

Solution and Rubric:

Solutions may vary

Level I	Level II	Level III	Level IV
Student is unable to create a first floor plan of a home using the requirements listed.	Student is somewhat able to create a first floor plan of a home using the requirements listed.	Student can create a first floor plan of a home using most of the requirements listed. They are able to list relatively accurate/realistic dimensions for each room, but total area is incorrect.	Student can accurately create a first floor plan of a home using the requirements listed. They are able to list relatively accurate/realistic dimensions for each room and find the total area.

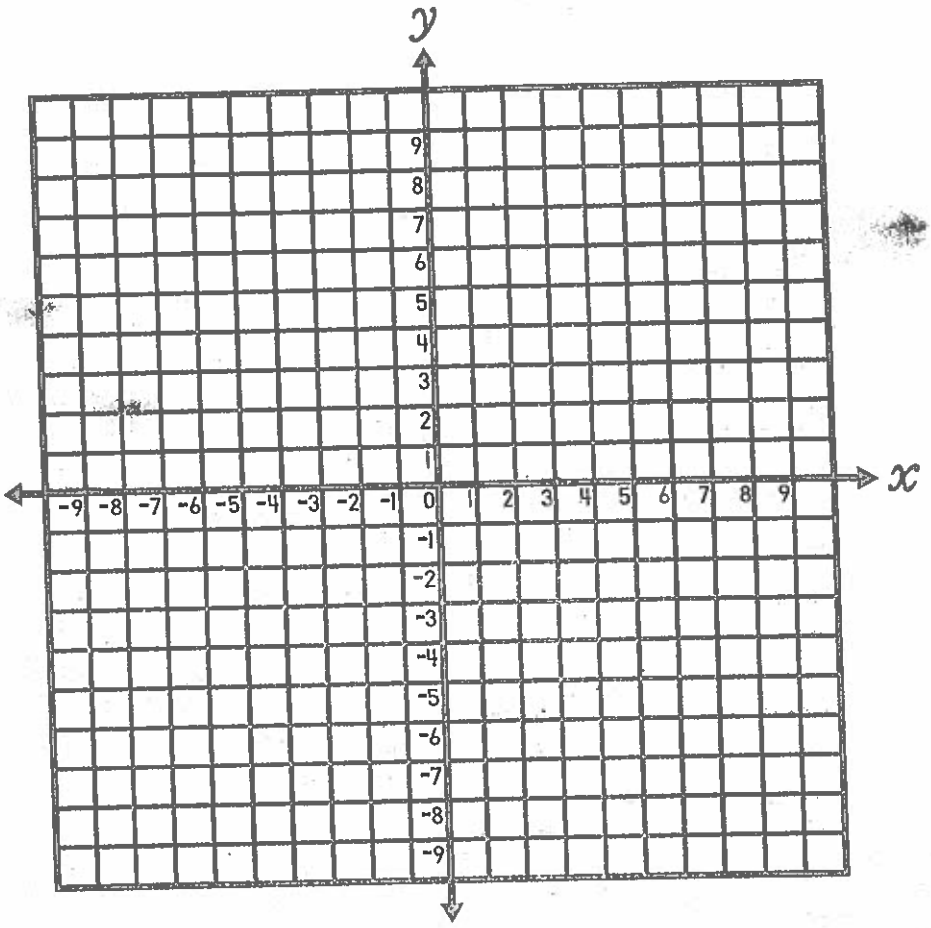
Source(s):

Photo located at the following website, labeled for reuse:
http://www.miserv.net/post/house-plans-under-800-sq-ft-moreover-3-bedroom-house-floor-plan-design/148919761233835.html

Unit 11 - Area and Perimeter
Performance Task

Task: Coordinates for three polygons are given. Plot each polygon.

Green: (-5, 3), (-5, 7), (1, 7), (1, 3)
Blue: (-3, -4), (-3, 1), (2, 1), (2, -4)
Red: (5, -3), (5, 0), (9, 0), (9, -3)

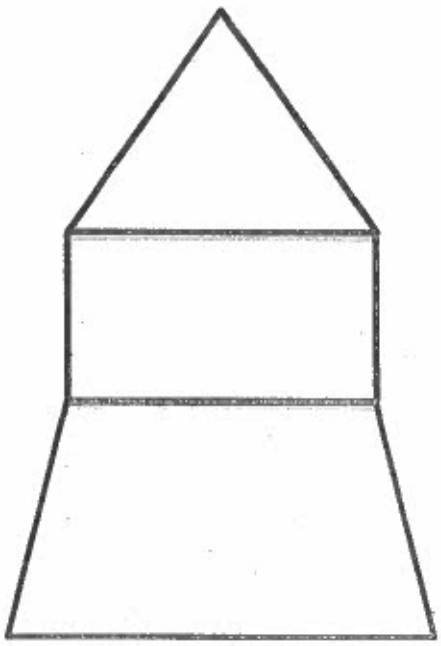


Determine which polygon has the largest perimeter and which polygon has the smallest area.

Write a sentence to explain how you determined which polygon has the largest perimeter and which polygon has the smallest area.

Unit 11 - Area and Perimeter
Performance Task 2

Task: A rocket ship is composed of a triangle, rectangle, and trapezoid. Find the area of the entire rocket using these clues.



Total Rocket Height = 40 ft

Clues:

- The triangle and trapezoid have equal heights of 15 ft. This will help you determine the height of the rectangle.
- The area of the rectangle is 125 ft^2. With this, you can determine the base of the rectangle, which is also the base of the triangle and one of the bases of the trapezoid.
- The second base of the trapezoid is $1\frac{1}{2}$ times its first base.

Calculate the area of the entire rocket.

Write a paragraph explaining how you used the clues to find the missing dimensions.

6th Unit 11 - Area and Perimeter
Performance Task 4

Standard(s) Addressed:

6.G.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real world math problems.

Standards for Mathematical Practice:

MP.1 Make sense of problems and persevere in solving them.

MP.2 Reason abstractly and quantitatively.

MP.4 Model with mathematics.

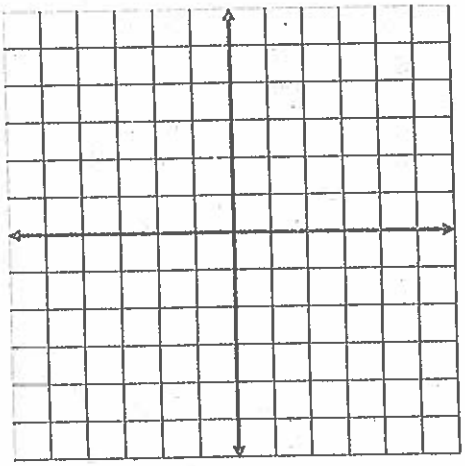
MP.5 Use appropriate tools strategically.

MP.6 Attend to precision.

Task:

Graph the points to form a polygon on the coordinate plane. Use what you know about inscribed figures to find the area of the polygon.

Graph: J(1, 3), K(5, 2), L(-3, -3)



Provide two situations in which you might need to be able to indirectly find *any* measurement of a given figure.