RATIONAL NUMBER OPERATIONS
WARM-UP

Name Answer Key

Date _____ Pd_____

1. Convert the following fraction to a decimal. Determine if it terminates or repeats.

$\frac{7}{8}$ 0.875 terminating

$\frac{1}{6}$ $0.1\overline{6}$ repeating

$\frac{11}{12}$ $0.91\overline{6}$ repeating

2. Amanda is reading a 208-page novel for her English class. On Monday she reads $\frac{3}{8}$ of the novel. On Tuesday she reads 28 pages, and on Wednesday she reads $\frac{1}{4}$ of the novel. How many more pages does Amanda have until she finishes the novel?

50 pages

RATIONAL NUMBER OPERATIONS
WARM-UP

Name _____

Date _____ Pd_____

1. Convert the following fraction to a decimal. Determine if it terminates or repeats.

$\frac{7}{8}$ _____

$\frac{1}{6}$ _____

$\frac{11}{12}$ _____

2. Amanda is reading a 208-page novel for her English class. On Monday she reads $\frac{3}{8}$ of the novel. On Tuesday she reads 28 pages, and on Wednesday she reads $\frac{1}{4}$ of the novel. How many more pages does Amanda have until she finishes the novel?

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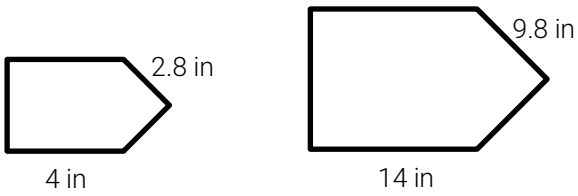
PROPORTIONALITY & SCALE DRAWINGS
WARM-UP

Name Answer Key _____

Date _____ Pd_____

1. Determine if the two regular pentagons below are proportional.



proportional

2. The distance between home and school is 4.5 miles. On a map it shows the distance to be 9 cm. What is the scale?

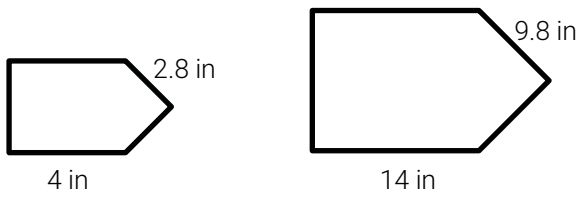
1 cm = 0.5 miles

PROPORTIONALITY & SCALE DRAWINGS
WARM-UP

Name _____

Date _____ Pd_____

1. Determine if the two regular pentagons below are proportional.



2. The distance between home and school is 4.5 miles. On a map it shows the distance to be 9 cm. What is the scale?

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RATES AND PERCENTS
WARM-UP

Name Answer Key

Date _____ Pd_____

1. A group of 400 town residents is asked to attend a town hall meeting. Of the 400 residents asked to attend, 36 were able to attend. What percentage of the town residents were able to attend?

9%

2. Jason worked the following hours in the month of June. What was the percent increase from week 1 to week 3?

WEEK	HOURS
1	18
2	26
3	24
4	33

$33.\bar{3}\%$

RATES AND PERCENTS
WARM-UP

Name _____

Date _____ Pd_____

1. A group of 400 town residents is asked to attend a town hall meeting. Of the 400 residents asked to attend, 36 were able to attend. What percentage of the town residents were able to attend?

2. Jason worked the following hours in the month of June. What was the percent increase from week 1 to week 3?

WEEK	HOURS
1	18
2	26
3	24
4	33

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FUNCTIONS AND SLOPE
WARM-UP

Name **Answer Key**

Date _____ Pd_____

1. Label each representation below as "Function" or "Not a Function". Explain your reasoning.

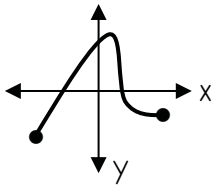
a. {(0, 2), (9, -1), (7, 3), (-4, 8), (-4, -8)}

Not a function; -4 has two different outputs.

b. $y = -5x^2 + 10$

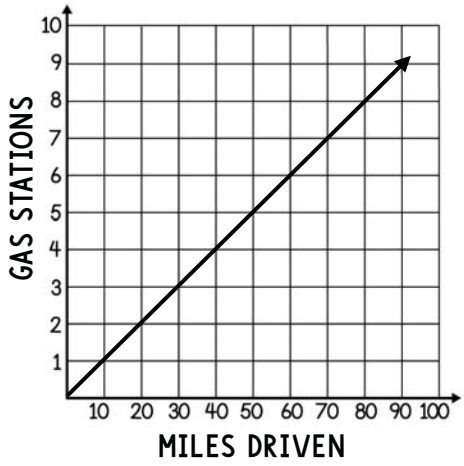
Function; any input will result in exactly one output.

c.



Function; passes the vertical line test.

2. The graph below shows the number of gas stations Jude passed based on the number miles he'd driven.



What is the unit rate of the graph, and what does it mean in the context of the situation?

$\frac{1}{10}$; Jude passes 1 gas station every 10 miles.

FUNCTIONS AND SLOPE
WARM-UP

Name _____

Date _____ Pd_____

1. Label each representation below as "Function" or "Not a Function". Explain your reasoning.

a. {(0, 2), (9, -1), (7, 3), (-4, 8), (-4, -8)}

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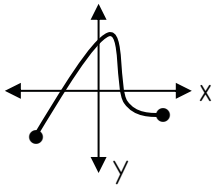

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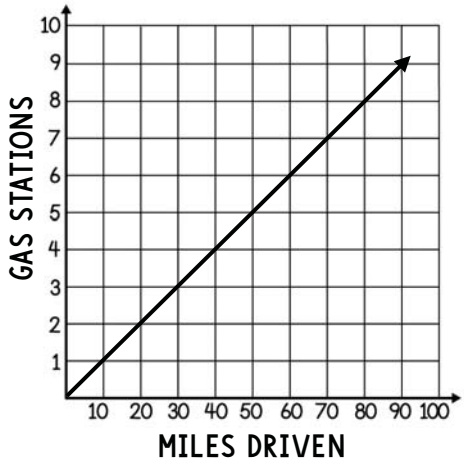


What is the unit rate of the graph, and what does it mean in the context of the situation?

PROPORTIONAL RELATIONSHIPS
WARM-UP

Name Answer Key

Date _____ Pd_____

1. The cost of 2 pounds of potatoes is $3.78. What is the constant of proportionality that represents the relationship between the cost, *y*, to the number of pounds of potatoes, *x*?

k = 1.89

2. Rebecca's piano lessons cost $45 per month. Complete the table below to show the cost over the next eight months.

MONTH	TOTAL COST ($)
1	$45
2	$90
3	$135
4	$180
5	$225
6	$270
7	$315
8	$360

PROPORTIONAL RELATIONSHIPS
WARM-UP

Name _____

Date _____ Pd_____

1. The cost of 2 pounds of potatoes is $3.78. What is the constant of proportionality that represents the relationship between the cost, *y*, to the number of pounds of potatoes, *x*?

2. Rebecca's piano lessons cost $45 per month. Complete the table below to show the cost over the next eight months.

MONTH	TOTAL COST ($)
1	
2	
3	
4	
5	
6	
7	
8	

LINEAR RELATIONSHIPS
WARM-UP

Name **Answer Key**

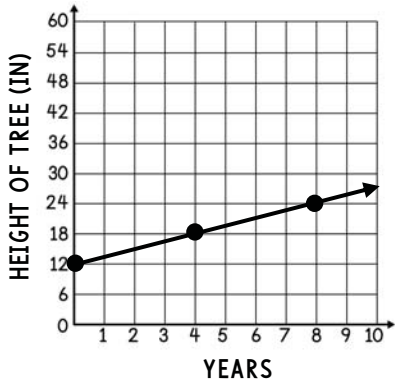
Date _____ Pd_____

1. Write an equation in slope-intercept form to represent the total cost of a cab ride (y) for a certain number of miles (x).

MILES	TOTAL COST
2	$9.50
4	$15.50
6	$21.50
8	$27.50

y = 3x + 3.5

2. Keith bought a tree for his backyard. The graph shows the height of the tree after a certain number of years.



a. At what rate is the tree growing? 1.5 inches/year

b. Write an equation for the graph. y = 1.5x + 12

c. Is the relationship shown in the graph linear?
Yes; it is a straight line.

LINEAR RELATIONSHIPS
WARM-UP

Name _____

Date _____ Pd_____

1. Write an equation in slope-intercept form to represent the total cost of a cab ride (y) for a certain number of miles (x).

MILES	TOTAL COST
2	$9.50
4	$15.50
6	$21.50
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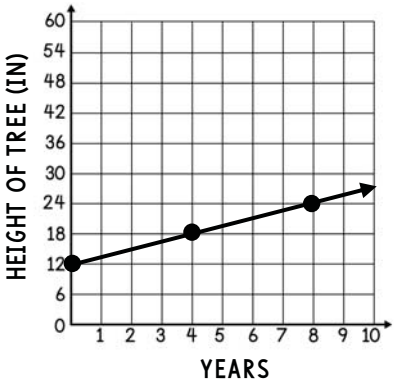

a. At what rate is the tree growing?

b. Write an equation for the graph.

c. Is the relationship shown in the graph linear?

EQUATIONS AND INEQUALITIES
WARM-UP

Name Answer Key

Date _____ Pd_____

1. Coach Emanuel is trying to lose weight. He starts 2017 weighing 296 pounds. If he plans to burn enough calories to lose 3 pounds per week, then how many weeks will pass before Coach Emanuel is at most 251 pounds? $x \geq 15$	2. What is the value of x in this equation? $-5x - 12 = 72$ $x = -16.8$

EQUATIONS AND INEQUALITIES
WARM-UP

Name _____

Date _____ Pd_____

1. Coach Emanuel is trying to lose weight. He starts 2017 weighing 296 pounds. If he plans to burn enough calories to lose 3 pounds per week, then how many weeks will pass before Coach Emanuel is at most 251 pounds?	2. What is the value of x in this equation? $-5x - 12 = 72$

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LINEAR EQUATIONS
WARM-UP

Name **Answer Key**

Date _____ Pd_____

1. Kia's plant is $8\frac{1}{5}$ inches tall and is growing $\frac{2}{3}$ inch each week. Lyric's plant is $10\frac{7}{10}$ inches tall and is growing $\frac{1}{6}$ inch each week. Write and solve an equation to find how many weeks it will take for the height of the two plants to be the same.

Equation: $8\frac{1}{5} + \frac{2}{3}x = 10\frac{7}{10} + \frac{1}{6}x$

Solution: 5 weeks

2. Trey and Sammy are both solving different equations.

a. Trey is solving his equation, and the last line of his work is "-2 = 2". What does this mean?

This means that there is no solution to the equation.

b. Sammy is solving his equation, and the last line of his work is "-4 = -4". What does this mean?

This means that there are infinitely many solutions to the equation.

LINEAR EQUATIONS
WARM-UP

Name _____

Date _____ Pd_____

1. Kia's plant is $8\frac{1}{5}$ inches tall and is growing $\frac{2}{3}$ inch each week. Lyric's plant is $10\frac{7}{10}$ inches tall and is growing $\frac{1}{6}$ inch each week. Write and solve an equation to find how many weeks it will take for the height of the two plants to be the same.

Equation: _____

Solution: _____

2. Trey and Sammy are both solving different equations.

a. Trey is solving his equation, and the last line of his work is "-2 = 2". What does this mean?

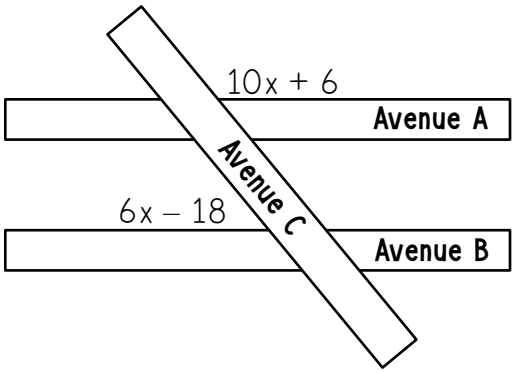
b. Sammy is solving his equation, and the last line of his work is "-4 = -4". What does this mean?

ANGLE RELATIONSHIPS
WARM-UP

Name **Answer Key**

Date _____ Pd_____

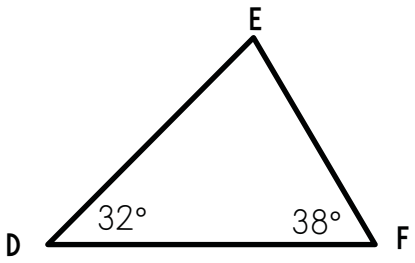
1. Avenue A runs parallel to Avenue B, and Avenue C runs diagonally across the two streets. Use the marked angles to write and solve an equation to find the value of x.



Equation: 16x – 12 = 180

Solution: x = 12

2. Gloria is comparing two triangles. In triangle ABC, she knows that angle A measures 32° and angle B measures 60°. Triangle DEF, the second triangle, is shown below.



Are triangles ABC and DEF similar triangles? Explain your reasoning.

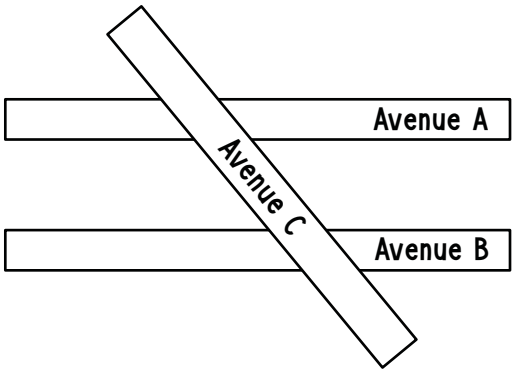
No; by finding missing angle E (110°), we know that there would not be two pairs of corresponding congruent angles.

ANGLE RELATIONSHIPS
WARM-UP

Name _____

Date _____ Pd_____

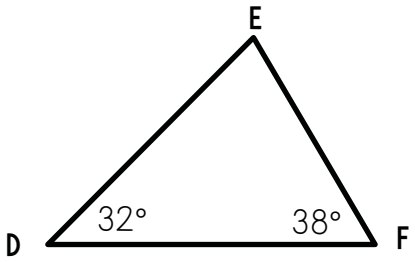
1. Avenue A runs parallel to Avenue B, and Avenue C runs diagonally across the two streets. Use the marked angles to write and solve an equation to find the value of x.



Equation: _____

Solution: _____

2. Gloria is comparing two triangles. In triangle ABC, she knows that angle A measures 32° and angle B measures 60°. Triangle DEF, the second triangle, is shown below.



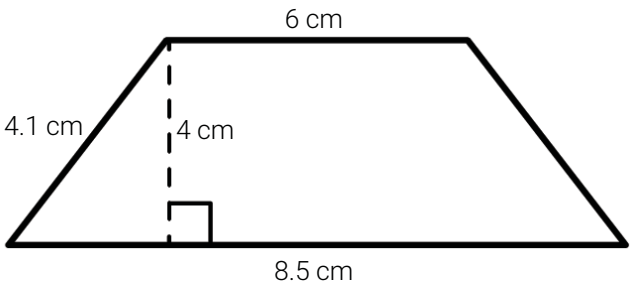
Are triangles ABC and DEF similar triangles? Explain your reasoning.

2D GEOMETRY
WARM-UP

Name Answer Key

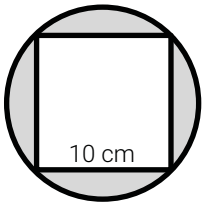
Date _____Pd_____

1. What is the area of the trapezoid below?



29 cm^2

2. A square is inscribed within a circle with a radius of 6 cm. What is the area of the shaded portion of the figure below?



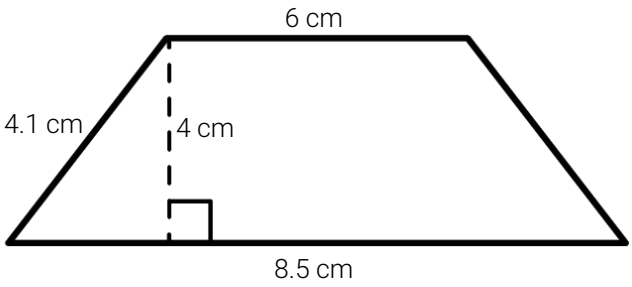
13.04 cm^2

2D GEOMETRY
WARM-UP

Name _____

Date _____Pd_____

1. What is the area of the trapezoid below?



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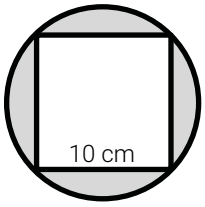

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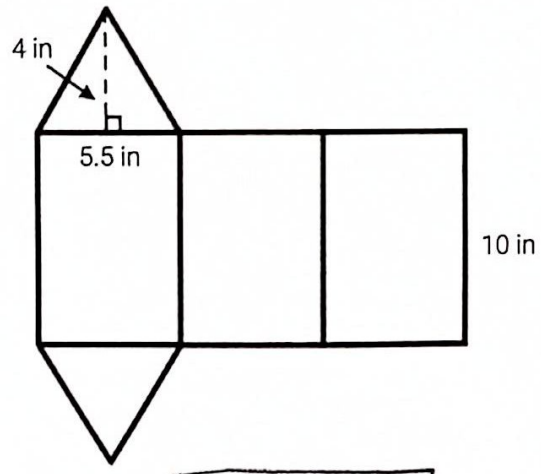
VOLUME AND SURFACE AREA
WARM-UP

Name Answer Key

Date _____ Pd_____

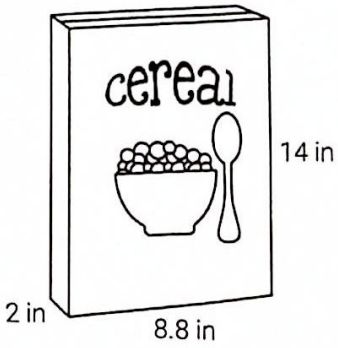
1. What is the total surface area of the triangular prism below?



174in²

~~184 in²~~

2. A box of cereal is halfway full. How much cereal is in the box below?



$V = (2in)(8.8in)(14in)$

$V = 246.4\ in^3$

Half is $123.2\ in^3$

~~123.2 in²~~

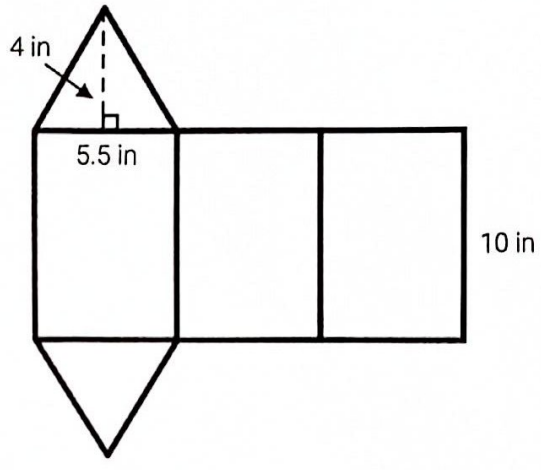
See next page

VOLUME AND SURFACE AREA
WARM-UP

Name _____

Date _____ Pd_____

1. What is the total surface area of the triangular prism below?



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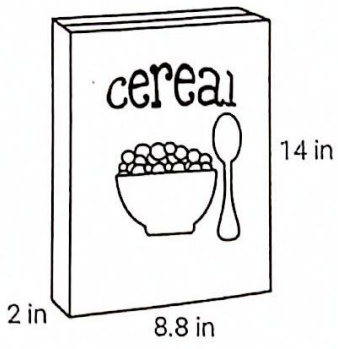
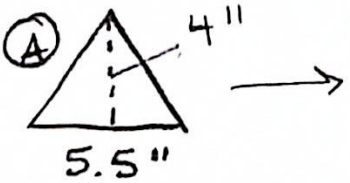
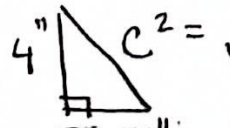


Ⓐ 



$c^2 = \sqrt{4^2 + 2.75^2} \Rightarrow c = 4.85"$

2 → $A = \frac{1}{2} b \cdot h = \frac{1}{2}(5.5")(4") = 11 in^2$

Ⓑ 

$A = b \cdot h = (5.5")(10")$

$A = 55\ in^2$

Ⓒ 

$A = b \cdot h = (10")(4.85")$

$A = 48.5\ in^2$

Total: $2(11 in^2) + 55 in^2 + 2(48.5 in^2)$

Total = 174 in^2

VOLUME
WARM-UP

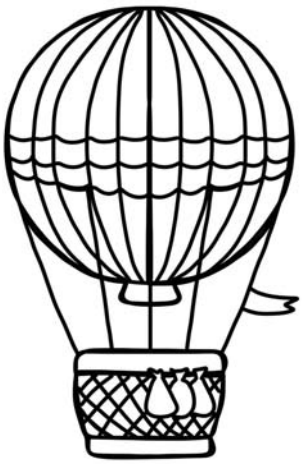
Name **Answer Key**

Date _____Pd_____

1. Tony is drinking soda out of a cylindrical glass with a radius of 3 centimeters and a height of 8 centimeters. If the glass is 60% full of soda, how many cubic centimeters of soda are in the glass? Use 3.14 for pi, and round your answer to the nearest tenth.

135.6 cm^3

2. Shelby is in a hot air balloon where the balloon is shaped like a sphere with a diameter of 50 feet. Find the amount of space occupied by the balloon. Use 3.14 for pi and round your answer to the nearest tenth.



65,416.7 ft^3

VOLUME
WARM-UP

Name _____

Date _____Pd_____

1. Tony is drinking soda out of a cylindrical glass with a radius of 3 centimeters and a height of 8 centimeters. If the glass is 60% full of soda, how many cubic centimeters of soda are in the glass? Round your answer to the nearest tenth.

_____

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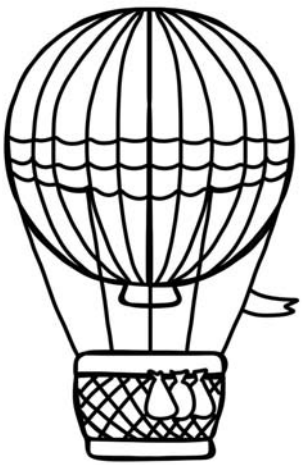


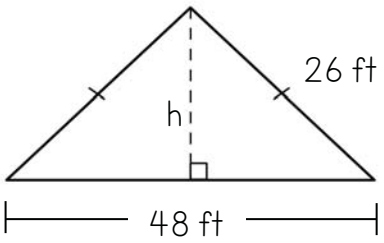
_____

PYTHAGOREAN THEOREM
WARM-UP

Name **Answer Key**

Date _____ Pd_____

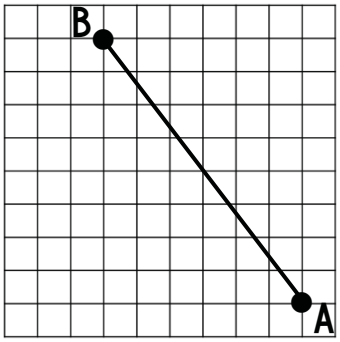
1. The side view of Mrs. Marigold's roof on her house is shown below.



Find h, the height of Mrs. Marigold's roof.

10 feet

2. Point A on the graph below represents Nate's house, and Point B represents Nate's favorite restaurant.



If each unit on the graph represents $\frac{3}{4}$ of a mile, how many miles does Nate live from his favorite restaurant?

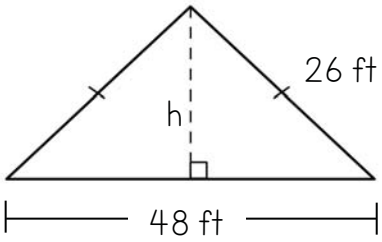
7.5 miles

PYTHAGOREAN THEOREM
WARM-UP

Name _____

Date _____ Pd_____

1. The side view of Mrs. Marigold's roof on her house is shown below.



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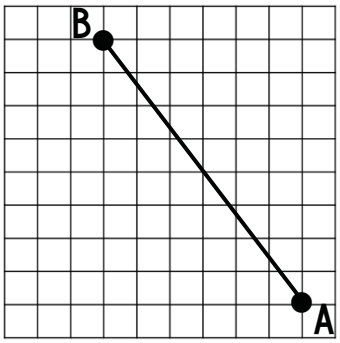


If each unit on the graph represents $\frac{3}{4}$ of a mile, how many miles does Nate live from his favorite restaurant?

EXPONENTS AND SCIENTIFIC NOTATION
WARM-UP

Name Answer Key

Date _____ Pd_____

1. In 2015, a high paid actress made $52,000,000. A second actress made 3.55×10^7 dollars. Find the combined amount of their salaries, and express your answer in both standard and scientific notation.

Standard: 87,500,000

Scientific: 8.75×10^7

2. Simplify each of the following expressions. Leave your answers as a variable raised to a positive exponent.

a. $b^5 \times (b^{-3})^3$ $\frac{1}{b^4}$

b. $w^4 \times \frac{w^2}{w^8}$ $\frac{1}{w^2}$

c. $m^{-4} \times (m^2)^5$ m^6

EXPONENTS AND SCIENTIFIC NOTATION
WARM-UP

Name _____

Date _____ Pd_____

1. In 2015, a high paid actress made $52,000,000. A second actress made 3.55×10^7 dollars. Find the combined amount of their salaries, and express your answer in both standard and scientific notation.

Standard: _____

Scientific: _____

2. Simplify each of the following expressions. Leave your answers as a variable raised to a positive exponent.

a. $b^5 \times (b^{-3})^3$ _____

b. $w^4 \times \frac{w^2}{w^8}$ _____

c. $m^{-4} \times (m^2)^5$ _____

RATIONAL NUMBER OPERATIONS
QUICK CHECK

Name Answer Key

Date _____Pd_____

1. A size 8 kid's shoe measures $9\frac{2}{3}$ inches. If 5 size 8 shoes are lined end to end, then how many inches will they cover?

A. $36\frac{2}{3}$ B. $48\frac{1}{3}$ C. $77\frac{1}{3}$ D. 62

2. The record low temperature in Fargo, ND is -37°F. The record high is 109°F. What is the difference in the record high and the record low temperatures?

F. 72
G. 109
H. 33
J. 146

3. The local volleyball team hosts a concession stand to raise money. They can spend $120 to purchase popcorn, candy, and drinks. They purchase 95 bags of popcorn at $0.75 each and 35 bags of candy at $1.20 each. How much money does the volleyball team have left to spend on drinks?

A. $7.25 B. $15.50 C. $6.75 D. $20.25

4. Mrs. Sloan is purchasing 3.4 pounds of trail mix that costs $4.25 per pound. How much change will Mrs. Sloan receive if she gives the cashier $20.00?

F. $14.45
G. $12.55
H. $5.55
J. $7.45

5. There are 24 people in a fitness studio. $\frac{3}{8}$ of the people are lifting weights, $\frac{1}{3}$ are cross training, and the remaining people are running. What fraction of the people are running?

A. $\frac{7}{24}$ B. $\frac{17}{24}$ C. $\frac{5}{12}$ D. $\frac{7}{8}$

1. Ⓐ ● Ⓒ Ⓓ
2. Ⓕ Ⓖ Ⓗ ●
3. Ⓐ Ⓑ ● Ⓓ
4. Ⓕ Ⓖ ● Ⓙ
5. ● Ⓑ Ⓒ Ⓓ
6. Ⓕ Ⓖ Ⓗ ●
7. ● Ⓑ Ⓒ Ⓓ
8. ● Ⓖ Ⓗ Ⓙ
9. Ⓐ ● Ⓒ Ⓓ
10. Use the grid below.

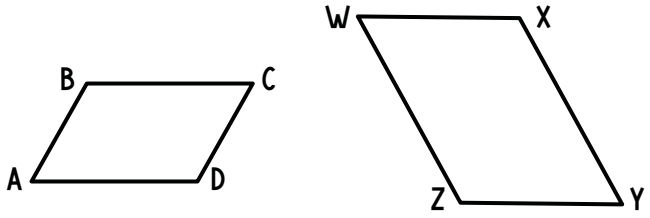
			6	0	.	3	2
⊕	⓪	⓪	⓪	●		⓪	⓪
⊖	①	①	①	①		①	①
	②	②	②	②		②	●
	③	③	③	③		●	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	●	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

PROPORTIONALITY & SCALE DRAWINGS
QUICK CHECK

Name Answer Key

Date _____ Pd_____

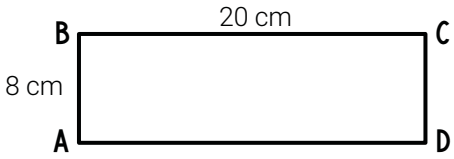
1. Figure ABCD is similar to figure WXYZ. Which proportion must be true for these figures?



A. $\frac{AB}{BC} = \frac{ZW}{WZ}$ B. $\frac{BD}{DC} = \frac{ZY}{XY}$ C. $\frac{AB}{DC} = \frac{WX}{ZY}$ D. $\frac{DA}{ZY} = \frac{CD}{XY}$

2. The rectangle is being reduced by a scale factor of $\frac{3}{4}$. What is the area of the new image?

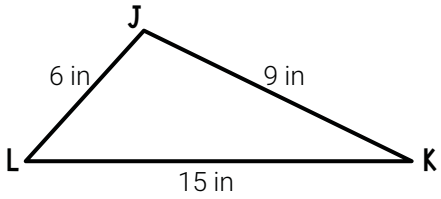
F. 180 cm^2
G. 90 cm^2
H. 160 cm^2
J. 75 cm^2

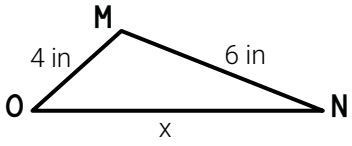


3. Micah made a scale model of the Empire State Building. The building has an actual height of 381 meters. Micah's model used a scale in which 1 cm represents 50 meters. What is the height in centimeters of Micah's model?

A. 3.2 cm
B. 19.05 cm
C. 36.83 cm
D. 7.62 cm

4. Triangle JKL is similar to triangle MNO. What is the perimeter of triangle MNO?





F. 9 in G. 27 in H. 20 in J. 11 in

1. Ⓐ Ⓑ ● Ⓓ
2. Ⓕ ● Ⓗ Ⓙ
3. Ⓐ Ⓑ Ⓒ ●
4. Ⓕ Ⓖ ● Ⓙ
5. Ⓐ ● Ⓒ Ⓓ
6. Ⓕ Ⓖ Ⓗ ●
7. ● Ⓑ Ⓒ Ⓓ
8. Ⓕ Ⓖ ● Ⓙ
9. Ⓐ Ⓑ ● Ⓓ

10. Use the grid below.

				6	.	2	5
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	①	①	①		①	①
	②	②	②	②		●	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	●
	⑥	⑥	⑥	●		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

RATES AND PERCENTS
QUICK CHECK

Name Answer Key

Date _____ Pd_____

1. Todd plans to swim 18 laps in the pool. Each lap is 50 yards. So far Todd has swam 738 yards. What percentage of the total has Todd completed?

   A. 18%
   B. 82%
   C. 62%
   D. 77%

2. Jameson is seeking a loan with a simple interest rate of 3% per year. If he wants to borrow $8,000, then how much will he be charged in interest after 4 years?

   F. $1,280.00
   G. $960.00
   H. $240.00
   J. $9,600.00

3. A hot air balloon travels 18 miles in 3 hours. At this rate, how many miles will the hot air balloon travel in $\frac{3}{4}$ hour?

   A. 4.5 mi B. 6 mi C. 11.5 mi D. 13.5 mi

4. The price of a tablet was increased from $180 to $207. By what percentage was the price of the table increased?

   F. 33% H. 27%
   G. 8% J. 15%

5. Margie has a $50.00 budget to purchase a $45.00 pair of boots. If there is an 8% sales tax rate, then how much under budget will Margie be?

   A. $8.60
   B. $5.00
   C. $1.40
   D. $4.20

1. Ⓐ ● Ⓒ Ⓓ
2. Ⓕ ● Ⓗ Ⓙ
3. ● Ⓑ Ⓒ Ⓓ
4. Ⓕ Ⓖ Ⓗ ●
5. Ⓐ Ⓑ ● Ⓓ
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7. ● Ⓑ Ⓒ Ⓓ
8. Ⓕ Ⓖ ● Ⓙ
9. Ⓐ Ⓑ Ⓒ ●
10. Use the grid below.

			1	0	.	5	
⊕	⓪	⓪	⓪	●		⓪	⓪
⊖	①	①	●	①		①	①
	②	②	②	②		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		●	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

FUNCTIONS AND SLOPE
QUICK CHECK

Name Answer Key

Date _____ Pd_____

1. The table below shows Vanessa's height in inches for two different years.

YEAR (x)	2000	2005
HEIGHT (y)	48 inches	54 inches

Which is a correct conclusion about the rate of change shown in the table?

A. Vanessa grows about 41.7 inches per year.

B. Vanessa grows about 6 inches per year.

C. Vanessa grows about 1.2 inches per year.

D. Vanessa grows about .83 inches per year.

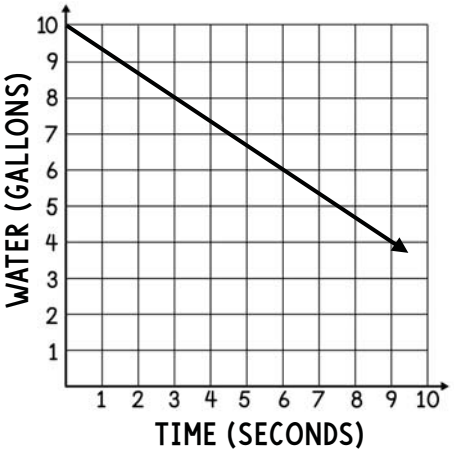
2. Ariel is emptying the water from a 10 gallon cooler. The graph shows the water level in the cooler as she empties it. Which best describes the rate of change shown in the graph?

F. The water level decreases 10 gallons per second.

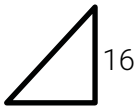
G. The water level decreases 1 gallon every 2 seconds.

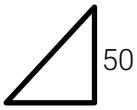
H. The water level decreases 3 gallons every 2 seconds.

J. The water level decreases 2 gallons every 3 seconds.

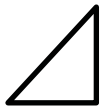


3. The slope of a graphed line is $\frac{2}{5}$. Which of the following triangles could lie on the line?

A. 

B. 

C. 

D. 

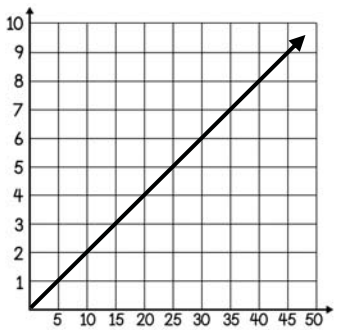
4. Which of the following situations does not have the same unit rate as the graph shown?

F. Asher buys gum for $0.20 a piece.

G. A daycare has six workers for every 30 children.

H. Melanie reads 9 pages of her book every 45 minutes.

J. Richie earns $10 every 2 hours to pet sit for his neighbor.



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10. Use the grid below.

-				8	.		
+	0	0	0	0		0	0
●	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	●		8	8
	9	9	9	9		9	9

PROPORTIONAL RELATIONSHIPS
QUICK CHECK

Name Answer Key

Date _____ Pd_____

1.	Ⓐ	Ⓑ	Ⓒ	●
2.	Ⓕ	Ⓖ	●	Ⓙ
3.	Ⓐ	●	Ⓒ	Ⓓ
4.	Ⓕ	●	Ⓗ	Ⓙ
5.	Ⓐ	Ⓑ	Ⓒ	●
6.	●	Ⓖ	Ⓗ	Ⓙ
7.	●	Ⓑ	Ⓒ	Ⓓ
8.	Ⓕ	●	Ⓗ	Ⓙ
9.	●	Ⓑ	Ⓒ	Ⓓ
10.	Ⓕ	●	Ⓗ	Ⓙ

1. Burger Town sells cheeseburgers for $7.95 each plus an additional $1.00 for each extra topping, *t*. Which of the following equations best represents the cost, *c*, of a cheeseburger?

A. $c = 7.95t$

B. $c = 8.95t$

C. $c = 7.95t + 1.00$

D. $c = 7.95 + 1.00t$

2. A standard bathtub holds 60 gallons of water. A full tub drains 12 gallons per minute. Which of the following tables best represents the situation?

F.

X	1	2	4	5
Y	60	48	24	12

H.

X	1	3	4	5
Y	48	24	12	0

G.

X	0	2	4	5
Y	60	48	24	12

J.

X	1	2	3	4
Y	12	24	36	48

3. Which of the following represents the constant of proportionality in the table below?

MONTHS	2	4	6	8	10
TOTAL REVENUE	$190	$380	$570	$760	$950

A. k = 85

B. k = 95

C. k = 190

D. k = 125

4. The table below shows the relationship between the number of miles traveled, *x*, and the number of gallons of gas used, *y*. Which of the following equations best represents the relationship?

X	35	70	105	140	175
Y	1	2	3	4	5

F. $35 = 1x$

G. $y = \frac{1}{35}x$

H. $y = 35x$

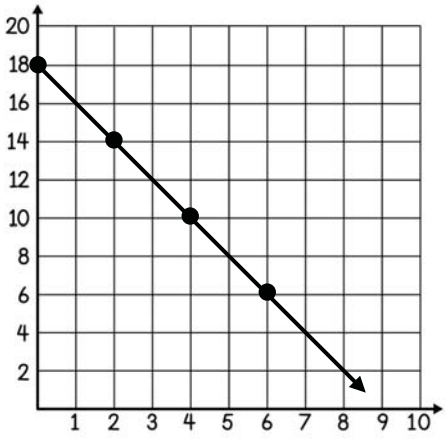
J. $y = 3.5x$

LINEAR RELATIONSHIPS
QUICK CHECK

Name Answer Key

Date _____ Pd_____

1. Which of the statements about the graph below is true?



A. The graph is non-linear and has an equation of y = -x + 18.

B. The graph is linear and has an equation of y = -x + 18.

C. The graph is linear and has an equation of y = -2x + 18.

D. None of the above statements are true.

2. The table below shows the amount that a catering company charges based on the number of people at an event. Which of the following equations shows the relationship between c, the amount the company charges based on p, the number of people at the event?

F. c = 16p

G. c = 75p + 13

H. p = 13c + 75

J. c = 13p + 75

PEOPLE (P)	TOTAL CHARGE (C)
25	$400
50	$725
75	$1,050
100	$1,375

3. Which of the following gives an example of an equation that is non-linear?

A. $y = x^2 - 1$ B. $y = 2x - 1$ C. $y = \frac{x}{4}$ D. $y = -2x$

4. Kit charges customers an initial fee plus a certain amount per hour to walk their pets. The table below shows the amount of money that Kit earns at her job based on the number of hours that she works. Which of the following equations represents a scenario where Kit would charge customers a higher hourly rate to walk their pets than what is shown in the table?

F. y = 7.25x + 20

G. y = 8x + 10

H. y = 7.5x

J. y = -10x + 15

HOURS	EARNINGS ($)
0	15
1	22.5
2	30
3	37.5

1. Ⓐ Ⓑ ● Ⓓ
2. Ⓕ Ⓖ Ⓗ ●
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4. Ⓕ ● Ⓗ Ⓙ
5. ● Ⓑ Ⓒ Ⓓ
6. Ⓕ Ⓖ ● Ⓙ
7. Ⓐ Ⓑ Ⓒ ●
8. Ⓕ ● Ⓗ Ⓙ
9. ● Ⓑ Ⓒ Ⓓ

10. Use the grid below.

-			1	2	.		
+	0	0	0	0		0	0
●	1	1	●	1		1	1
	2	2	2	●		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

EQUATIONS AND INEQUALITIES
QUICK CHECK

Name Answer Key

Date _____ Pd_____

1. Ms. Hernandez is taking her children and their friends to the movies. She will pay $10 for her adult ticket and $7 for each child ticket. Ms. Hernandez does not want to spend more than $40. Which inequality can be used to find c, the number of child tickets Ms. Hernandez can purchase?

A. $7 + 10c > 40$ **B.** $10c - 7 \leq 40$ **C.** $10 + 7c > 40$ **D.** $10 + 7c \leq 40$

2. If x = -3, then which inequality is true?

F. $-5x + 2 \leq 12$ **G.** $3x - 7 \geq -16$ **H.** $14 + 2x < 5$ **J.** $\frac{1}{2}x + 6 > 11$

3. Which two expressions are equivalent?

A. $4(2 + x)$ and $4 \cdot 2 + 2 \cdot x$ **B.** $4 + 2 + x$ and $(4 + 2) + x$ **C.** $4 \cdot x + 2$ and $4 \cdot (x + 2)$ **D.** $4 \div (2 - x)$ and $4 - 2 \div x$

4. Which expression is equivalent to $9y - \frac{1}{2}(4y + 20)$?

F. $11y - 10$

G. $7y - 10$

H. $7y + 10$

J. $11y + 10$

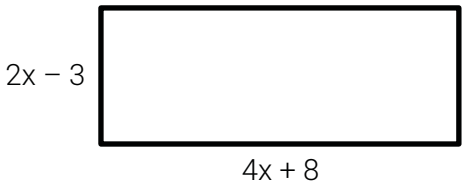
5. If the perimeter of the rectangle is 118 units, then what is the value of x?

A. x = 9

B. x = 13

C. x = 18

D. x = 21



1. Ⓐ Ⓑ Ⓒ ●
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7. Ⓐ Ⓑ Ⓒ ●
8. Ⓕ Ⓖ ● Ⓙ
9. Ⓐ Ⓑ ● Ⓓ
10. Use the grid below.

-				8	.	5	
⊕	0	0	0	0		0	0
●	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		●	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	●		8	8
	9	9	9	9		9	9

LINEAR EQUATIONS
QUICK CHECK

Name **Answer Key**

Date _____ Pd_____

1. Gym A charges a registration fee of $75 plus $35.75 per month for members. Gym B charges a registration fee of $164 plus $17.95 for members. After how many months would the total cost at Gym A and Gym B to be the same for members?

A. 10 months

B. 5 months

C. 7 months

D. The total cost will never be the same.

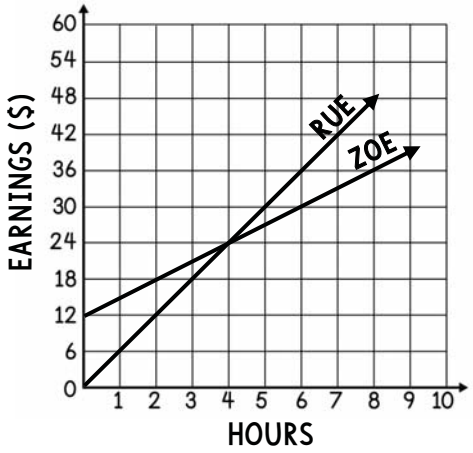
2. The graph below shows the number of hours that Rue and Zoe have been working at their jobs, as well as how much money they've earned. Which is a correct conclusion about the information shown in the graph?

F. After 24 hours, Rue and Zoe will have earned the same amount of money.

G. After 4 hours, Zoe will have earned $12 more than Rue.

H. After 4 hours, Rue will have earned $12 more than Zoe.

J. After 4 hours, Rue and Zoe will have earned the same amount of money.



3. Find the value of x needed to make the equation below true.

$$\frac{3}{4}(20x - 8) - 3 = 54$$

A. x = 3.8

B. x = 4.2

C. x = 4

D. x = 3.3

4. The area of the rectangle shown below is 36 square units. Set up and solve an equation to find the value of x.

F. x = 4.4

G. x = 3.45

H. x = 3

J. x = 5

1. Ⓐ ● Ⓒ Ⓓ
2. Ⓕ Ⓖ Ⓗ ●
3. Ⓐ ● Ⓒ Ⓓ
4. Ⓕ Ⓖ ● Ⓙ
5. ● Ⓑ Ⓒ Ⓓ
6. Ⓕ Ⓖ ● Ⓙ
7. ● Ⓑ Ⓒ Ⓓ
8. Ⓕ Ⓖ Ⓗ ●
9. Ⓐ ● Ⓒ Ⓓ

10. Use the grid below.

						.	9	4
+	0	0	0	0			0	0
−	1	1	1	1			1	1
	2	2	2	2			2	2
	3	3	3	3			3	3
	4	4	4	4			4	●
	5	5	5	5			5	5
	6	6	6	6			6	6
	7	7	7	7			7	7
	8	8	8	8			8	8
	9	9	9	9			●	9

ANGLE RELATIONSHIPS
QUICK CHECK

Name **Answer Key**

Date _____ Pd_____

1. Two angles in a triangle measure (2.3x + 25)° and (5.8x +11)°. What is the value of x if the two angles are congruent to one another?

A. x = 34.2 **B.** x = 10.3 **C.** x = 6.6 **D.** x = 4

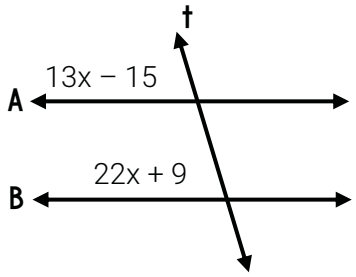
2. Lines A and B are parallel lines cut by transversal, t. Which of the following equations could be used to find the value of x?

F. 35x – 6 = 180

G. 9x + 24 = 180

H. 13x – 15 = 22x + 9

J. 13x + 9 = 22x – 15



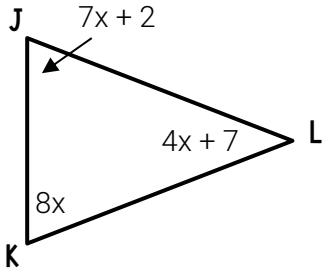
3. Triangle JKL is shown below. Which of the following is not a true statement about the angles in the triangle?

A. The sum of ∠J + ∠K + ∠L = 180°.

B. The measure of ∠J is 65°.

C. The measure of ∠K is 89°.

D. The measure of ∠L is 43°.



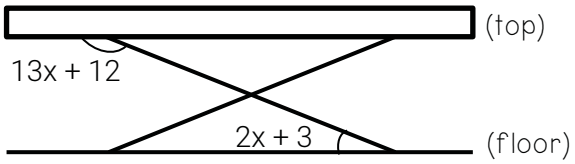
4. The top of Lucy's dining table is parallel to the floor as shown. Using the two marked angles, write and solve an equation to find the value of x.

F. $x = -\frac{9}{11}$

G. x = 11

H. x = 25

J. x = 9



5. Jose constructed Triangle DCE, where m∠D = 103° and m∠C = 22°. Remy constructed triangle PQT, where m∠Q = 22°, and m∠T = 55°. Are the two triangles similar to one another?

A. Yes, because two pairs of corresponding angles in the triangles are congruent.

B. No, because none of the corresponding pairs of angles in the triangles are congruent.

C. No, because 103 + 22 ≠ 22 + 55.

D. There is not enough information to determine if the two triangles are similar to one another.

1. Ⓐ Ⓑ Ⓒ ●
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7. Ⓐ Ⓑ ● Ⓓ
8. Ⓕ Ⓖ Ⓗ ●
9. ● Ⓑ Ⓒ Ⓓ

10. Use the grid below.

		1	3	6	.		
+	0	0	0	0		0	0
−	1	●	1	1		1	1
	2	2	2	2		2	2
	3	3	●	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	●		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

2D GEOMETRY
QUICK CHECK

Name Answer Key

Date _____ Pd_____

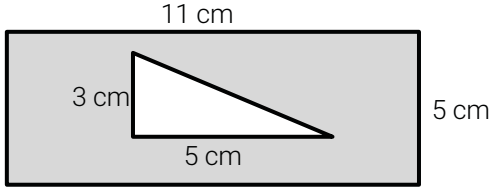
1. In PE, a parachute is laid out on the gym floor. The parachute has a radius of 16 feet. Which measurement is closest to the circumference of the parachute in feet?

A. 100.48 ft **B.** 198.4 ft **C.** 49.6 ft **D.** 803.84 ft^2

2. A coffee shop sign is in the shape of a circle. The sign measures 18 inches across in diameter. Which measurement is closest to the area of the sign in square inches?

F. 56.52 in^2 **G.** 101.36 in^2 **H.** 188.78 in^2 **J.** 254.34 in^2

3. A triangle is inscribed in a rectangle, as shown below. What is the area of the shaded region?



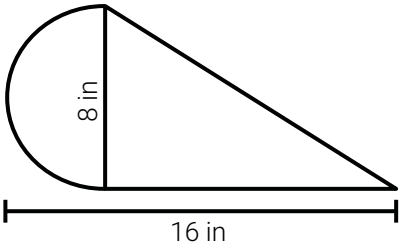
A. 40 cm^2

B. 62.5 cm^2

C. 47.5 cm^2

D. 22.75 cm^2

4. Using various puzzle pieces, Marco forms the figure below. What is the best estimate of the area of the figure?



F. 146 in^2 **G.** 73 in^2 **H.** 57 in^2 **J.** 123 in^2

1. ● Ⓑ Ⓒ Ⓓ
2. Ⓕ Ⓖ Ⓗ ●
3. Ⓐ Ⓑ ● Ⓓ
4. Ⓕ ● Ⓗ Ⓙ
5. Ⓐ Ⓑ Ⓒ ●
6. Ⓕ ● Ⓗ Ⓙ
7. Ⓐ Ⓑ Ⓒ ●
8. Ⓕ Ⓖ ● Ⓙ
9. Ⓐ ● Ⓒ Ⓓ
10. Use the grid below.

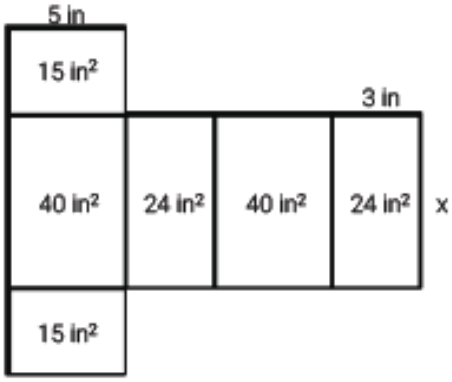
		1	4	2	.	5	
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	●	①	①		①	①
	②	②	②	●		②	②
	③	③	③	③		③	③
	④	④	●	④		④	④
	⑤	⑤	⑤	⑤		●	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

VOLUME AND SURFACE AREA
QUICK CHECK

Name _____

Date _____ Pd _____

1. The rectangular prism below has a total surface area of 158 in². Use the net below to determine the missing dimension, x.



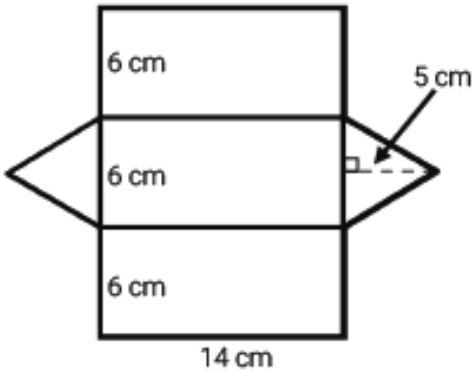
A. 6 in **B.** 8 in **C.** 12 in **D.** 10 in

2. A tissue box measures 6 inches wide and 6 inches long. If the volume of the tissue box is 252 inches, then what is the height of the tissue box?

F. 11 in
G. 4 in
H. 7 in
J. 5 in

This test has been pieced together from two different tests, so you only have 9, not 10 problems to solve!

3. The net below depicts a triangular prism. What is the total surface area of the prism?



A. 282 cm²
B. 210 cm²
C. 312 cm²
D. 624 cm²

1.	Ⓐ ● Ⓒ Ⓓ
2.	Ⓕ Ⓖ ● Ⓙ
3.	● Ⓑ Ⓒ Ⓓ
5.	Ⓐ Ⓑ ● Ⓓ
6.	● Ⓖ Ⓗ Ⓙ
7.	Ⓐ Ⓑ ● Ⓓ
8.	Ⓕ Ⓖ Ⓗ ●
9.	● Ⓑ Ⓒ Ⓓ

10. Use the grid below.

			1	2	.		
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	①	●	①		①	①
	②	②	②	●		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

PYTHAGOREAN THEOREM
QUICK CHECK

Name **Answer Key** _____

Date _____ Pd_____

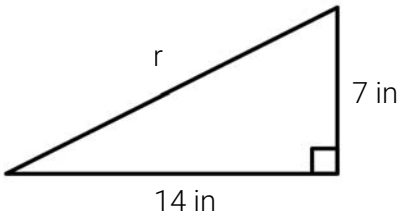
1. The side view of a ramp that Jessie built for his race cars is shown below. Find r, the length of the ramp to the nearest tenth.

A. 21 inches

B. 15.7 inches

C. 6.5 inches

D. 17.4 inches



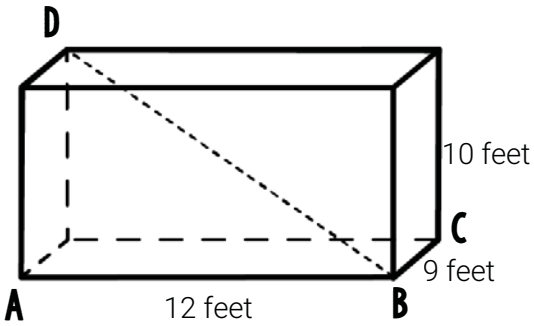
2. Use the diagram below to find the approximate length of diagonal BD.

F. 18 feet

G. 11.2 feet

H. 15 feet

J. 21.2 feet



3. Titus is building a triangular frame with three pieces of wood that measure 3 inches, 5 inches and 10 inches. Which of the following is true about the frame?

A. The frame will be a right triangle because $5(2) + 3(2) < 10(2)$.

B. The frame will be a right triangle because $5^2 + 3^2 < 10^2$.

C. The frame will not be a right triangle because $5^2 + 3^2 \neq 10^2$.

D. The frame will not be a right triangle because $5(2) + 3(2) \neq 10(2)$.

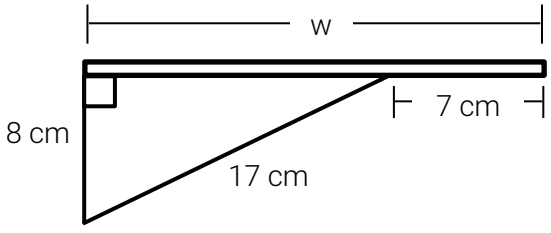
4. The side view of a wall shelf in Luke's office is shown below. The diagonal support piece is 17 centimeters, and the piece against the wall is 8 centimeters. What is the approximate measure of w, the total width of the shelf?

F. 8 centimeters

G. 15 centimeters

H. 22 centimeters

J. 26 centimeters



1. Ⓐ ● Ⓒ Ⓓ
2. ● Ⓖ Ⓗ Ⓙ
3. Ⓐ Ⓑ ● Ⓓ
4. Ⓕ Ⓖ ● Ⓙ
5. Ⓐ Ⓑ Ⓒ ●
6. ● Ⓖ Ⓗ Ⓙ
7. Ⓐ Ⓑ Ⓒ ●
8. Ⓕ ● Ⓗ Ⓙ
9. Ⓐ ● Ⓒ Ⓓ

10. Use the grid below.

			1	0	.		
⊕	⓪	⓪	⓪	●		⓪	⓪
⊖	①	①	●	①		①	①
	②	②	②	②		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

EXPONENTS AND SCIENTIFIC NOTATION
QUICK CHECK

Name **Answer Key**

Date _____ Pd_____

1. Which of the following is true?

   A. $n^9 \times n^3 = n^{27}$

   B. $\frac{n^{12}}{n^4} = n^8$

   C. $(n^6)^2 = n^8$

   D. $n^{-4} = -n^4$

2. Which value is equal to $\sqrt[3]{729}$?

   F. $\sqrt[3]{729} = 243$ because $729 \div 3 = 243$.

   G. $\sqrt[3]{729} = 81$ because $729 \div 3 = 243$ and $243 \div 3 = 81$.

   H. $\sqrt[3]{729} = 3$ because $(3^3)^2 = 729$.

   J. $\sqrt[3]{729} = 9$ because $9 \times 9 \times 9 = 729$.

3. Shantel read that the distance between the sun and Mercury is about 36,000,000 miles. Which of the following correctly represents this distance in scientific notation?

   A. 0.36×10^8 B. 3.6×10^7 C. 3.6×10^{-7} D. 3.6×10^6

4. In one year, a theme park had approximately 2×10^7 guests. In the same year, a second theme park had approximately 4×10^6 guests. Which is a true statement about the number of guests each theme park had?

   F. The first theme park had about 5 times as many guests than the second.

   G. The second theme park had about 2 times as many guests than the first.

   H. The first theme park had about 10 times as many guests than the first.

   J. The first theme park had about 2 times as many guests than the first.

5. Jett knows that $x^2 = 64$. Which of the following represents the step that Jett should take to find the correct value of x?

   A. $64 \div 2 = x$

   B. $64 \div 4 = x$

   C. $\sqrt{64} = x$

   D. $\sqrt[3]{64} = x$

1. Ⓐ ● Ⓒ Ⓓ
2. Ⓕ Ⓖ Ⓗ ●
3. Ⓐ ● Ⓒ Ⓓ
4. ● Ⓖ Ⓗ Ⓙ
5. Ⓐ Ⓑ ● Ⓓ
6. Ⓕ Ⓖ ● Ⓙ
7. Ⓐ Ⓑ ● Ⓓ
8. ● Ⓖ Ⓗ Ⓙ
9. Ⓐ Ⓑ Ⓒ ●

10. Use the grid below.

				3	.		
+	0	0	0	0		0	0
−	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	●		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9