

Pre-Module Assessment

Name _____

Date _____

1. Complete each number sentence to make it true. Write one number from the given answer choices in each box.

$$2 \div 6 = \frac{\boxed{}}{\boxed{}}$$

$$\frac{1}{7} = \boxed{} \div \boxed{}$$

Answer Choices

1	2	6	7
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2. Divide.

$$1,938 \div 24 = \underline{\hspace{2cm}}$$

3. Evaluate the expression.

$$\frac{1}{2} + 2(3.5) - \frac{2}{5}$$

4. A city has an elevation of 3,869 meters above sea level, where 3,869 represents the city's elevation. What number represents an elevation of 112 meters below sea level?

5. Evaluate the expression.

$$-(-6)$$

6. Order the numbers from least to greatest. Write one number from the given answer choices in each box.

Least						Greatest

Answer Choices

$ 0.7 $	$-2\frac{1}{3}$	-6.4	$ \frac{13}{8} $	1	$ \frac{-2}{9} $
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7. Determine which expression represents each description. Write one expression from the given answer choices in each box.

Description	Expression
The product of 5 and the sum of a number and 2	
The quotient of 5 and the sum of a number and 2	
Two times the difference of a number and 5	
The sum of a number and 5, doubled	

Answer Choices

$2(x + 5)$	$2(x - 5)$	$5(x + 2)$	$5 \div (x + 2)$
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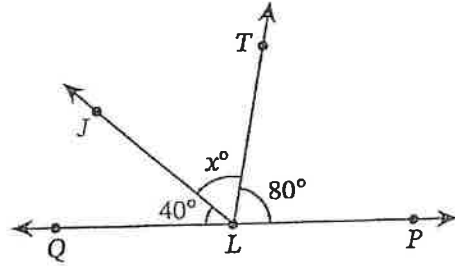
8. Solve.

$$x + 4 = 15$$

9. A shop sells tacos for \$3.75 each. On Monday, the shop makes \$240 from selling tacos. How many tacos does the shop sell on Monday?

_____ tacos

10. The diagram shows \overleftrightarrow{QP} , \overleftrightarrow{LJ} , and \overleftrightarrow{LT} intersecting at point L . The measure of $\angle QLP$ is 180° .



Solve for x .

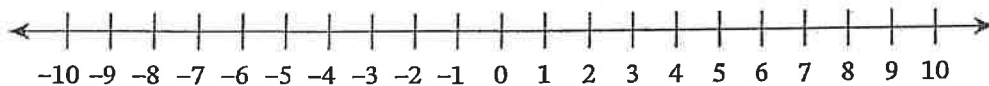
11. Which of these expressions are equivalent to $3(x + 2y) + 4x + 6y$? Choose **all** that apply.
- A. $7x + 8y$
 - B. $7x + 12y$
 - C. $3x + 2y + 4x + 6y$
 - D. $3x + 6y + 4x + 6y$
 - E. $3(x + 2y) + 2(2x + 3y)$

12. Choose **all** the values that make the inequality true.

$$4x + 1 > 9$$

- A. 0
- B. 2
- C. 3
- D. $\frac{5}{3}$
- E. 8

13. Graph the solutions to $x < 7$ on the number line.



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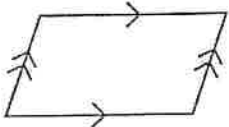
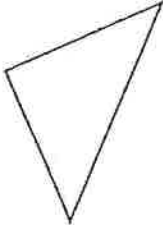
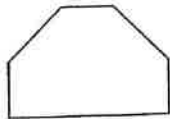
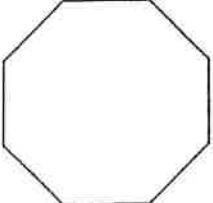
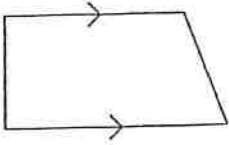
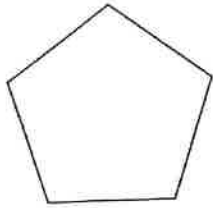
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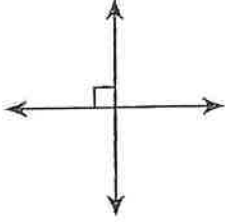
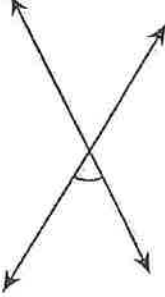
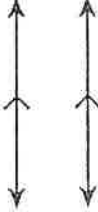
1. Match each shape with its most specific name. Write the letter that corresponds to a shape in each box.

Shape Name	Shape
hexagon	
octagon	
parallelogram	
pentagon	
trapezoid	
triangle	

Answer Choices

<p>A.</p> 	<p>B.</p> 	<p>C.</p> 
<p>D.</p> 	<p>E.</p> 	<p>F.</p> 

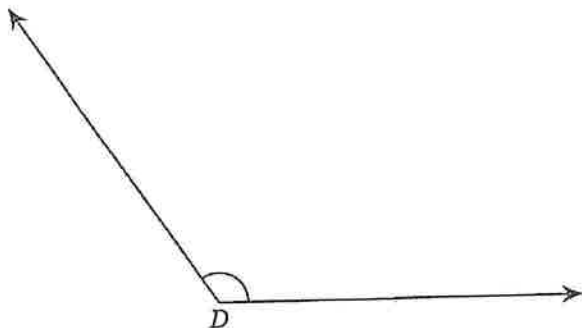
2. Identify the lines in each figure as parallel, perpendicular, or neither parallel nor perpendicular. Write the description from the given answer choices in each box.

Figure	Shape
	
	
	

Answer Choices

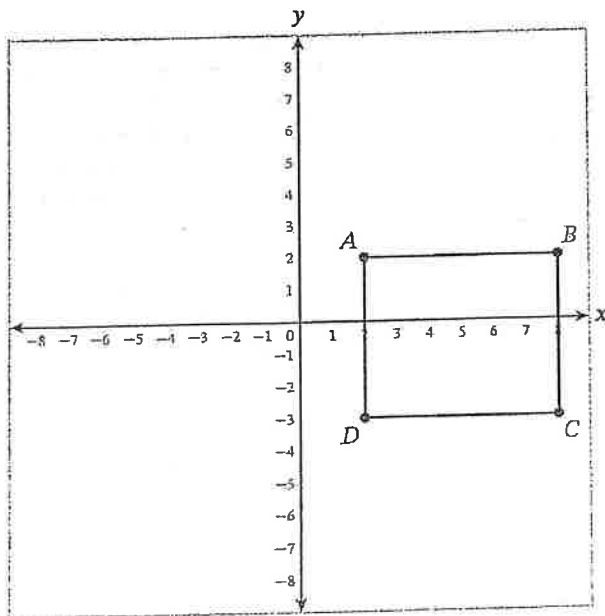
parallel	perpendicular	neither parallel nor perpendicular
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3. Use a protractor to find the measure of $\angle D$.



The measure of $\angle D$ is _____^o.

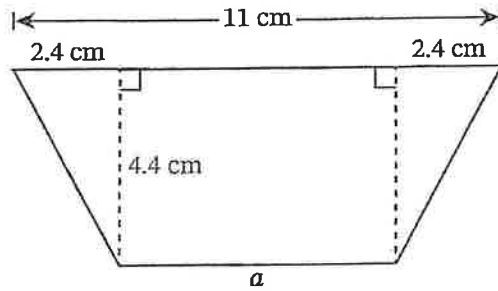
4. Consider rectangle $ABCD$ plotted in the coordinate plane.



Find the area of rectangle $ABCD$.

_____ square units

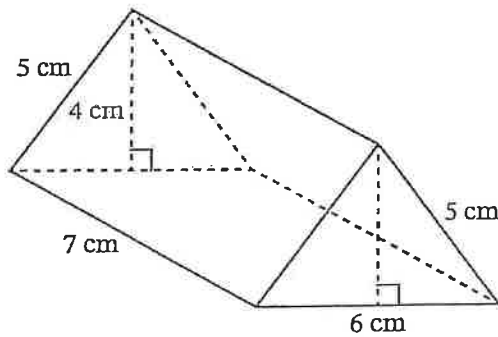
5. Consider the polygon shown.



What is the area of the polygon?

_____ square centimeters

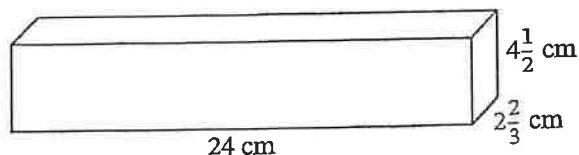
6. Consider the right triangular prism shown.



What is the surface area of the right triangular prism?

_____ square centimeters

7. Consider the right rectangular prism.



What is the volume of the right rectangular prism?

_____ cubic centimeters

8. Which expressions are equivalent to "103% of d "? Choose **all** that apply.

A. $\frac{103}{100}d$

B. $\frac{103}{100}d$

C. $1.03d$

D. $10.3d$

E. $103d$

9. Jada has 6 multicolored sports bands. She says that 24% of her sports bands are multicolored. What is the total number of sports bands Jada has?

_____ sports bands

10. Abdul fills his bird feeder with $2\frac{1}{2}$ cups of birdseed 3 times a week. The bag of birdseed he buys contains 30 cups of birdseed. Using the contents of the bag, for how many weeks can Abdul fill his bird feeder?

_____ weeks

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1. Evaluate the expression.

$$-(-6)$$

2. Evaluate the expression $5^2 + 9^2$.

3. Evaluate 85×10^4 .

4. Divide.

$$1,938 \div 24 = \underline{\hspace{2cm}}$$

5. Order the numbers from least to greatest. Write one number from the given answer choices in each box.

Least			Greatest		

Answer Choices

$\frac{2}{3}$	$-\frac{4}{7}$	5.8	-1.7	-2	$\frac{13}{5}$
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6. Complete each number sentence to make it true.

$$5.4 - 1.1 = \underline{\hspace{2cm}} \quad 9.6 - 4.7 = \underline{\hspace{2cm}} \quad 7.86 - 3.48 = \underline{\hspace{2cm}}$$

7. What is the value of $3.4(6.8)$?

- A. 10.2
- B. 20.82
- C. 23.12
- D. 231.2

8. Divide.

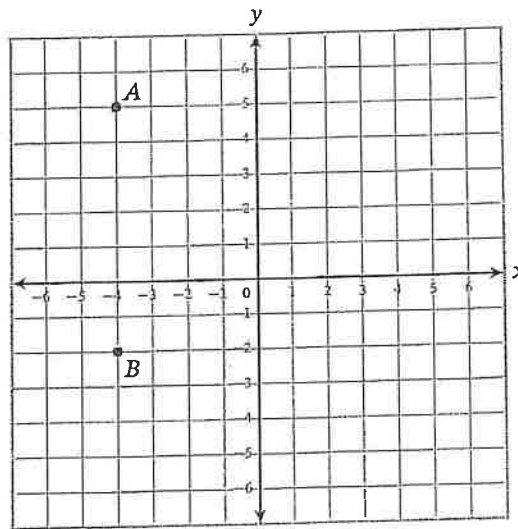
$$11.48 \div 2.8$$

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1. What is the distance between point *A* and point *B*?



_____ units

2. Logan has an ice cream recipe that uses cups of sugar and cups of milk.

Part A

The table shows the ratio relationship between the number of cups of sugar and the number of cups of milk in Logan's recipe. Complete the table.

Number of Cups of Sugar, x	Number of Cups of Milk, y
1	
2	12
	24
6	

Part B

Write the number in the blank that makes the statement true.

Logan needs _____ cups of milk for every 1 cup of sugar.

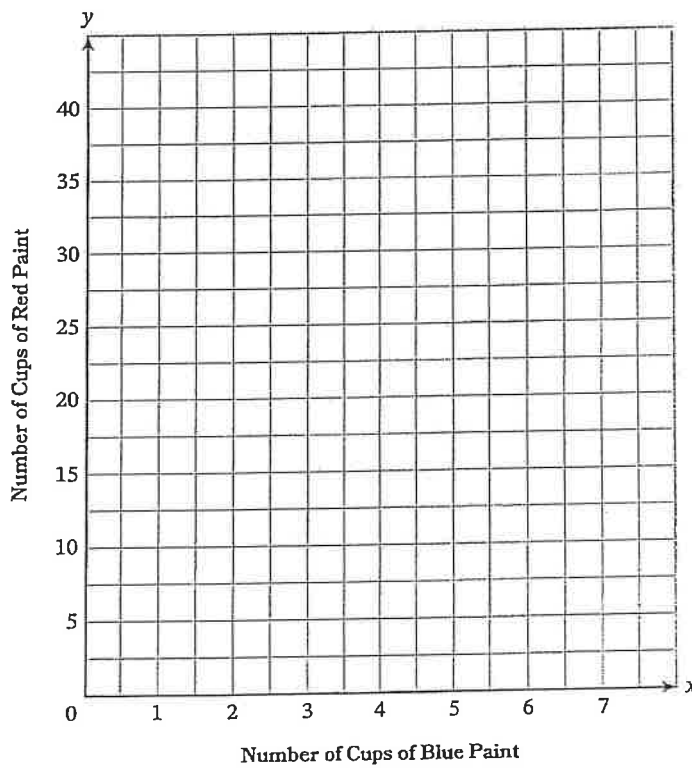
Part C

What is the unit rate associated with the rate from Part B?

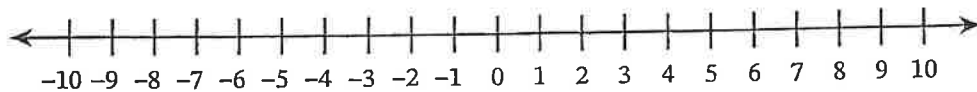
3. Consider the table shown. It describes the ratio relationship between the number of cups of blue paint and the number of cups of red paint to make a shade of purple.

Number of Cups of Blue Paint, x	Number of Cups of Red Paint, y
1	5
2	10
4	20
6	30

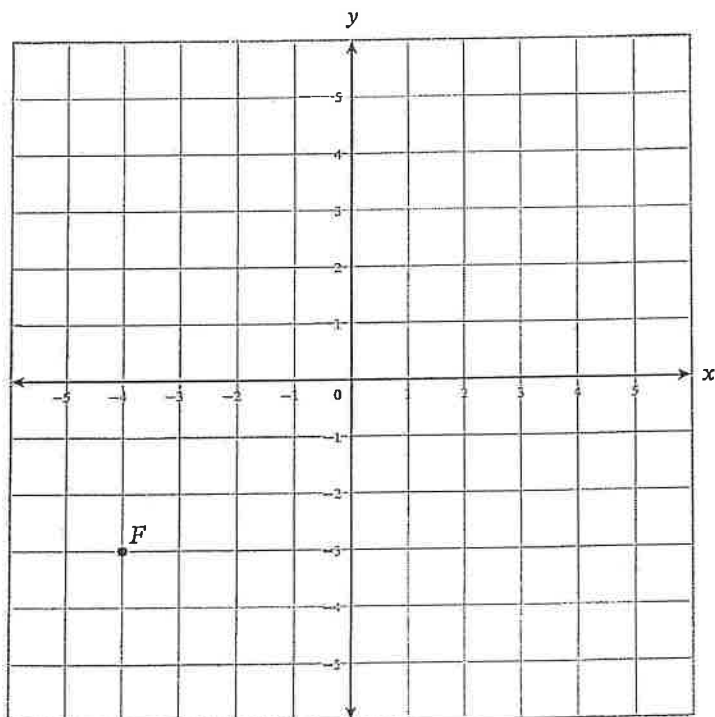
Plot four points in the coordinate plane that represent the pairs of numbers shown in the table.



4. Graph the solutions to $x < 7$ on the number line.



5. Consider the graph.



Part A

What is the ordered pair of point F ?

(_____ , _____)

Part B

Point H is the reflection of point F across the y -axis. What is the ordered pair of point H ?

(_____ , _____)

6. Solve the equation $\frac{2}{3}x = 10$.

7. Determine which expression represents each description. Write one expression from the given answer choices in each box.

Description	Expression
The product of 5 and the sum of a number and 2	
The quotient of 5 and the sum of a number and 2	
Two times the difference of a number and 5	
The sum of a number and 5, doubled	

Answer Choices

$2(x + 5)$	$2(x - 5)$	$5(x + 2)$	$5 \div (x + 2)$
------------	------------	------------	------------------

8. Which of these expressions are equivalent to $3(x + 2y) + 4x + 6y$? Choose **all** that apply.
- A. $7x + 8y$
 - B. $7x + 12y$
 - C. $3x + 2y + 4x + 6y$
 - D. $3x + 6y + 4x + 6y$
 - E. $3(x + 2y) + 2(2x + 3y)$

9. Complete the equation. Write one number from the given answer choices in the box.

$$\frac{2}{3}x = \frac{2}{15}$$

$$x = \begin{array}{|c|} \hline \square \\ \hline \square \\ \hline \end{array}$$

Answer Choices

$\frac{1}{5}$	5	$\frac{15}{2}$
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10. Divide.

$$2\frac{3}{5} \div 1\frac{1}{4}$$

11. Jada has 6 multicolored sports bands. She says that 24% of her sports bands are multicolored. What is the total number of sports bands Jada has?

_____ sports bands

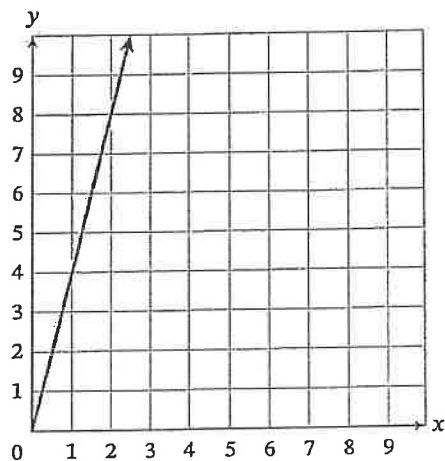
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1. Nora has 5 more snails than Henry. If s represents the number of snails Henry has, write an expression that represents the number of snails Nora has.

2. Consider the proportional relationship shown in the graph.



Identify the constant of proportionality, or unit rate, in the proportional relationship.

3. Solve the equation for x .

$$\frac{2}{5} = \frac{8}{x}$$

4. Evaluate each expression.

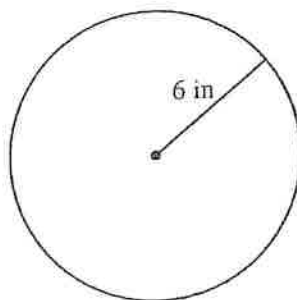
$$10 - 7$$

$$10 - (-7)$$

$$7 - 10$$

$$7 - (-10)$$

5. What is the area of the circle?



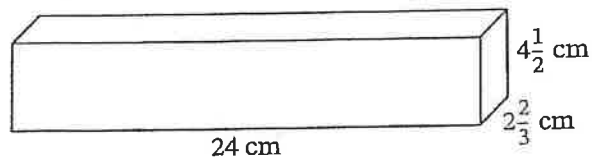
- A. 6π sq in
- B. 12π sq in
- C. 36π sq in
- D. 113π sq in

6. Consider the relationship between time t in hours and distance d in miles represented in the table.

Time, t (hours)	Distance, d (miles)
4	48
6	72
8	96

Which equation represents the relationship between t and d ?

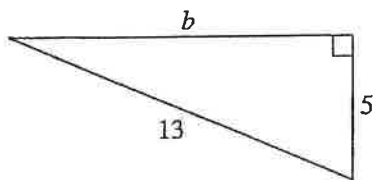
- A. $t = \frac{12}{d}$
B. $t = 12d$
C. $d = 12t$
D. $d = \frac{12}{t}$
7. Consider the right rectangular prism.



What is the volume of the right rectangular prism?

_____ cubic centimeters

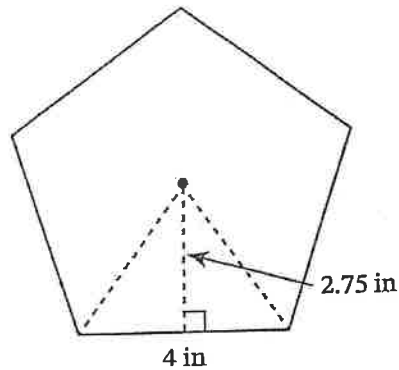
8. Consider the triangle.



What is the value of b ?

9. Solve the equation $5(2x + 3) - 7x = 20$.

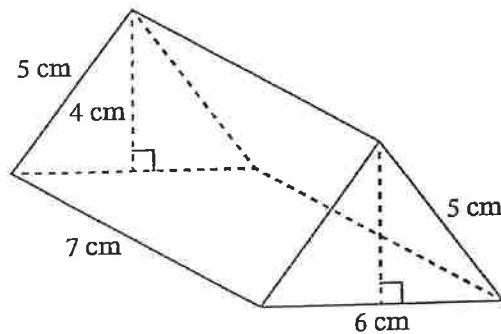
10. Consider the regular pentagon.



What is the area of the regular pentagon?

_____ square inches

11. Consider the right triangular prism shown.



What is the surface area of the right triangular prism?

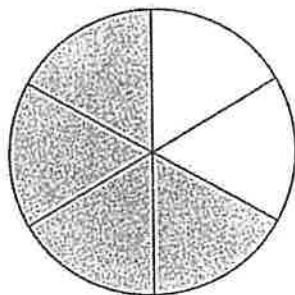
_____ square centimeters

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1. The circle is divided into equal-size parts.



What fraction of the circle is shaded?

- A. $\frac{1}{6}$
- B. $\frac{2}{4}$
- C. $\frac{2}{6}$
- D. $\frac{4}{6}$
2. Ava has fiction and nonfiction books. The ratio of the number of fiction books to the number of nonfiction books is 3 : 5. Which statements must be true? Choose **all** that apply.
- A. Of Ava's books, $\frac{3}{5}$ are fiction.
- B. Of Ava's books, 3 out of every 8 are fiction.
- C. Ava has 3 fiction books and 5 nonfiction books.
- D. Ava has $\frac{3}{5}$ as many fiction books as nonfiction books.
- E. Ava has 2 more nonfiction books than fiction books.

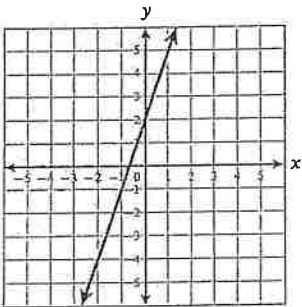
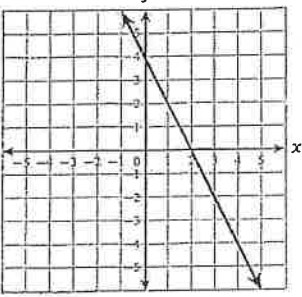
3. Jonas makes school spirit bracelets. Out of every 12 bracelets, 7 are green. He makes 60 bracelets. How many bracelets are green?

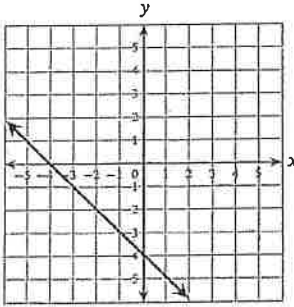
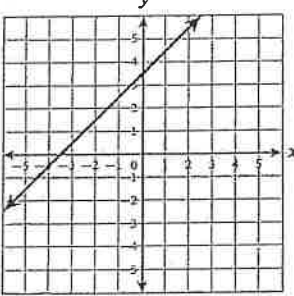
There are _____ green bracelets.

4. Write each fraction in decimal form. Use bar notation if appropriate.

Fraction	Decimal
$\frac{1}{8}$	
$\frac{2}{9}$	

5. Determine whether the slope of each line is positive or negative.

Graph	Positive Slope	Negative Slope
		
		

Graph	Positive Slope	Negative Slope
		
		

6. The equation $f = -2h + 15$ represents the relationship between the temperature f in degrees Fahrenheit and the amount of time that has passed h in hours since the temperature was first measured.

Complete the table.

Time, h (hours)	Temperature, f (degrees Fahrenheit)
2	
5	
	1
	0

7. The equation $y = 0.02x + 8,849$ describes the increase in the height of a mountain, where y represents the approximate height of the mountain in meters and x represents the number of years that have passed since the mountain was first measured.

Circle an answer choice from each list to make the statement true.

In the graph of the equation, the slope of the line represents (A), and the y -intercept of the line represents (B).

A

the increase in the height
of the mountain in meters
in 1 year

the height of the mountain
in meters immediately after
it was first measured

the number of years that have
passed since the mountain was
first measured

B

the increase in the height
of the mountain in meters
in 1 year

the height of the mountain
in meters immediately after
it was first measured

the number of years that have
passed since the mountain was
first measured

Number Correct: _____
Improvement: _____

Generating Equivalent Expressions—Round 2

Directions: Write each as an equivalent expression in standard form as quickly and accurately as possible within the allotted time.

1.	$1 + 1 + 1$	
2.	$1 + 1 + 1 + 1$	
3.	$(1 + 1 + 1) + 1$	
4.	$(1 + 1 + 1) + (1 + 1)$	
5.	$(1 + 1 + 1) + (1 + 1 + 1)$	
6.	$x + x + x$	
7.	$x + x + x + x$	
8.	$(x + x + x) + x$	
9.	$(x + x + x) + (x + x)$	
10.	$(x + x + x) + (x + x + x)$	
11.	$(x + x + x + x) + (x + x)$	
12.	$x + 2x$	
13.	$x + 4x$	
14.	$x + 6x$	
15.	$x + 8x$	
16.	$7x + x$	
17.	$8x + 2x$	
18.	$2x - x$	
19.	$2x - 2x$	
20.	$2x - 3x$	
21.	$2x - 4x$	
22.	$2x - 8x$	

23.	$3x + 5x - 4x$	
24.	$8x - 6x + 4x$	
25.	$7x - 4x + 5$	
26.	$(9x - 1) + x$	
27.	$(9x - 1) + 2x$	
28.	$(9x - 1) + 3x$	
29.	$(9x - 1) + 5x$	
30.	$(9x - 1) + 6x$	
31.	$(-3x + 3) - 2$	
32.	$(-3x + 3) - 3$	
33.	$(-3x + 3) - 4$	
34.	$(-3x + 3) - 5$	
35.	$(5x - 2) + (2x + 5)$	
36.	$(8 - x) + (3x + 2)$	
37.	$(5x + y) + (x + y)$	
38.	$\left(\frac{5}{2}x + \frac{3}{2}y\right) + \left(\frac{11}{2}x - \frac{3}{4}y\right)$	
39.	$\left(\frac{1}{6}x - \frac{3}{8}y\right) + \left(\frac{2}{3}x - \frac{7}{4}y\right)$	
40.	$(9.7x - 3.8y) + (-2.8x + 4.5y)$	
41.	$(1.65x - 2.73y) + (-1.35x + 3.76y)$	
42.	$(6.51x - 4.39y) + (-7.46x + 8.11x)$	
43.	$\left(0.7x - \frac{2}{9}y\right) - \left(-\frac{7}{5}x + 2\frac{1}{3}x\right)$	
44.	$(8.4x - 2.25y) - \left(-2\frac{1}{2}x - 4\frac{3}{8}y\right)$	

Number Correct: _____

Applying Properties of Exponents to Generate Equivalent Expressions II—Round 1

Directions: Simplify each expression using the laws of exponents. Use the least number of bases possible and only positive exponents. When appropriate, express answers without parentheses or as equal to 1. All letters denote numbers.

1.	$4^5 \cdot 4^{-4}$	
2.	$4^5 \cdot 4^{-3}$	
3.	$4^5 \cdot 4^{-2}$	
4.	$7^{-4} \cdot 7^{11}$	
5.	$7^{-4} \cdot 7^{10}$	
6.	$7^{-4} \cdot 7^9$	
7.	$9^{-4} \cdot 9^{-3}$	
8.	$9^{-4} \cdot 9^{-2}$	
9.	$9^{-4} \cdot 9^{-1}$	
10.	$9^{-4} \cdot 9^0$	
11.	$5^0 \cdot 5^1$	
12.	$5^0 \cdot 5^2$	
13.	$5^0 \cdot 5^3$	
14.	$(12^3)^9$	
15.	$(12^3)^{10}$	
16.	$(12^3)^{11}$	
17.	$(7^{-3})^{-8}$	
18.	$(7^{-3})^{-9}$	
19.	$(7^{-3})^{-10}$	
20.	$(\frac{1}{2})^9$	
21.	$(\frac{1}{2})^8$	
22.	$(\frac{1}{2})^7$	

23.	$(\frac{1}{2})^6$	
24.	$(3x)^5$	
25.	$(3x)^7$	
26.	$(3x)^9$	
27.	$(8^{-2})^3$	
28.	$(8^{-3})^3$	
29.	$(8^{-4})^3$	
30.	$(22^0)^{50}$	
31.	$(22^0)^{55}$	
32.	$(22^0)^{60}$	
33.	$(\frac{1}{11})^{-5}$	
34.	$(\frac{1}{11})^{-6}$	
35.	$(\frac{1}{11})^{-7}$	
36.	$\frac{56^{-23}}{56^{-34}}$	
37.	$\frac{87^{-12}}{87^{-34}}$	
38.	$\frac{23^{-15}}{23^{-17}}$	
39.	$(-2)^{-12} \cdot (-2)^1$	
40.	$\frac{2y}{y^3}$	
41.	$\frac{5xy^7}{15x^7y}$	
42.	$\frac{16x^6y^9}{8x^{-5}y^{-11}}$	
43.	(2^{-4})	
44.	$(9^{-8})(27^{-})$	

Number Correct: _____

Improvement: _____

Applying Properties of Exponents to Generate Equivalent Expressions I—Round 2

Directions: Simplify each expression using the laws of exponents. Use the least number of bases possible and only positive exponents. All letters denote numbers.

1.	$5^2 \cdot 5^3$	
2.	$5^2 \cdot 5^4$	
3.	$5^2 \cdot 5^5$	
4.	$2^7 \cdot 2^1$	
5.	$2^8 \cdot 2^1$	
6.	$2^9 \cdot 2^1$	
7.	$3^6 \cdot 3^2$	
8.	$3^6 \cdot 3^3$	
9.	$3^6 \cdot 3^4$	
10.	$7^{15} \cdot 7$	
11.	$7^{16} \cdot 7$	
12.	$11^{12} \cdot 11^2$	
13.	$11^{12} \cdot 11^4$	
14.	$11^{12} \cdot 11^6$	
15.	$23^5 \cdot 23^2$	
16.	$23^6 \cdot 23^3$	
17.	$23^7 \cdot 23^4$	
18.	$13^7 \cdot 13^3$	
19.	$15^7 \cdot 15^3$	
20.	$17^7 \cdot 17^3$	
21.	$x^7 \cdot x^3$	
22.	$y^7 \cdot y^3$	

23.	$7^3 \cdot 7^2$	
24.	$7^2 \cdot 7^3$	
25.	$(-4)^3 \cdot (-4)^{11}$	
26.	$(-4)^{11} \cdot (-4)^3$	
27.	$(0.2)^3 \cdot (0.2)^{11}$	
28.	$(0.2)^{11} \cdot (0.2)^3$	
29.	$(-2)^9 \cdot (-2)^5$	
30.	$(-2.7)^5 \cdot (-2.7)^9$	
31.	$3.1^6 \cdot 3.1^6$	
32.	$57^6 \cdot 57^6$	
33.	$z^6 \cdot z^6$	
34.	$4 \cdot 2^9$	
35.	$4^2 \cdot 2^9$	
36.	$16 \cdot 2^9$	
37.	$16 \cdot 2^3$	
38.	$9 \cdot 3^5$	
39.	$3^5 \cdot 9$	
40.	$3^5 \cdot 27$	
41.	$5^7 \cdot 25$	
42.	$5^7 \cdot 125$	
43.	$2^{11} \cdot 4$	
44.	$2^{11} \cdot 16$	

Name: _____ Per. _____

Equations Worksheet

Directions: Solve each equation for the variable. SHOW YOUR WORK FOR CREDIT!

1. $-5 = 6d - 7d + 4$

2. $4e - 4 = e - 4$

3. $-7f + 6 = 116 + 3f$

4. $4j + 26 = 50 + 6j$

5. $3q + 7 = 7q - 13$

6. $21 - r = -87 + 2r$

7. $8k - 15 = 4k + 13$

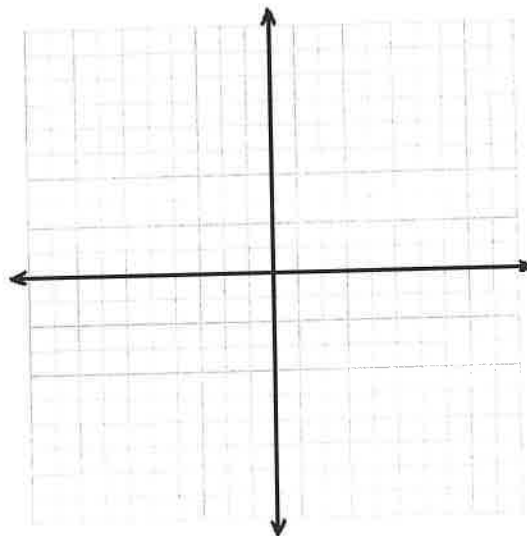
8. $2d + 18 = 12 - 6(d + 7)$

9. $3(5c - 4) = 8c + 2$

Graphing Linear Equations

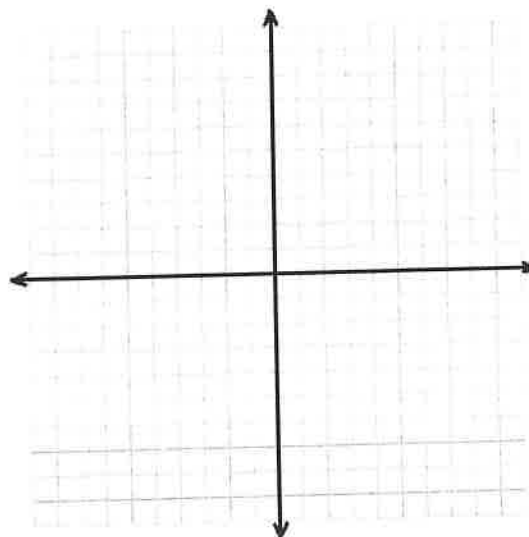
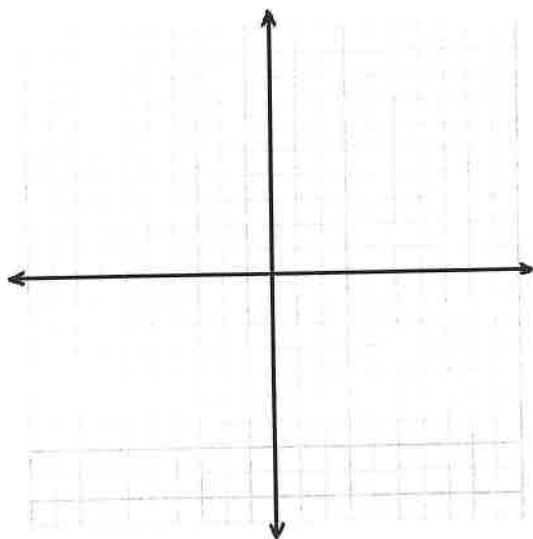
Graphing The Linear Equation: $y = 3x - 5$

- 1) Find the slope: $m = 3 \rightarrow m = \frac{3}{1} = \frac{y}{x}$.
- 2) Find the y-intercept: $x = 0, b = -5 \rightarrow (0, -5)$
- 3) Plot the y-intercept
- 4) Use slope to find the next point: Start at $(0, -5)$
 $m = \frac{3}{1} = \frac{\Delta y}{\Delta x} \rightarrow$ up 3 on the y-axis
 \rightarrow right 1 on the x-axis
 $(1, -2)$ Repeat: $(2, 1) (3, 4) (4, 7)$
- 5) To plot to the left side of the y-axis, go to y-int. and do the opposite. (Down 3 on the y, left 1 on the x)
 $(-1, -8)$
- 6) Connect the dots.



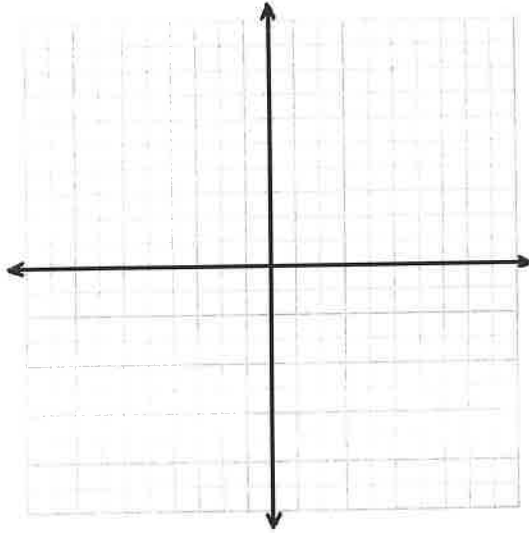
1) $y = 2x + 1$

2) $y = -4x + 5$

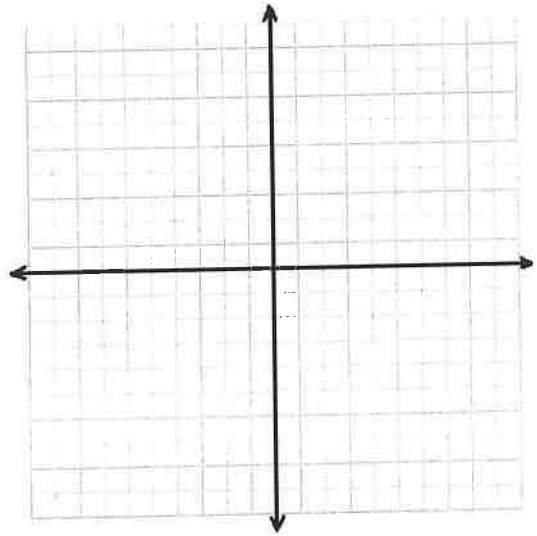


Graphing and Systems of Equations Packet

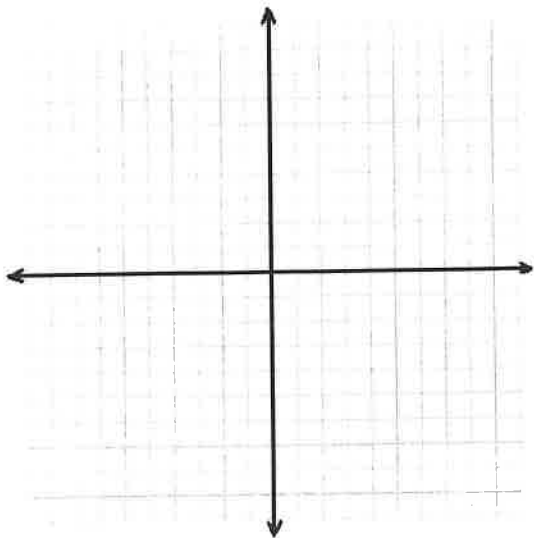
3) $y = \frac{1}{2}x - 3$



4) $y = -\frac{2}{3}x + 2$



5) $y = -x - 3$



6) $y = 5x$

