

Santa Rosa County District Schools

# GRADE 8 MATH

FSA Practice Problems Answer  
Key



Department of Math & Science

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# Grade 8 Mathematics

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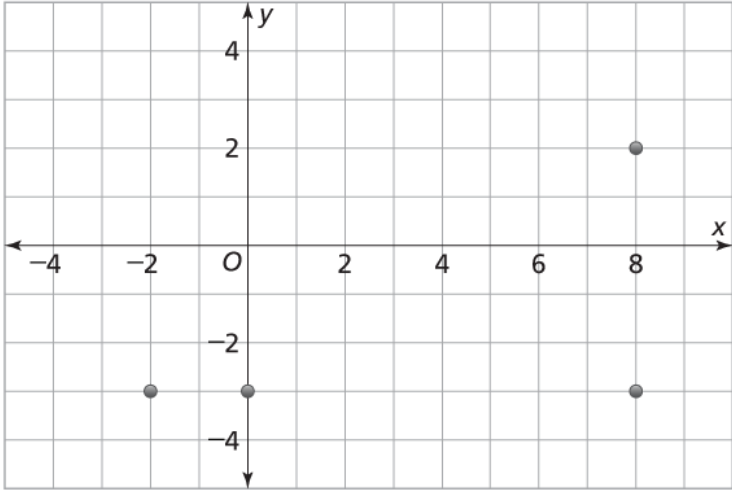
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# FSA Grade 8 Practice (NONCALCULATOR)

MAFS.8.EE.1.1	
1	<p>Select all of the expressions that are equivalent to <math>(2^2)^4 \div 2^2</math>.</p> <p>(A) <math>2^{10}</math></p> <p>(B) <math>2^4</math></p> <p>(C) <math>(2^2)^3</math></p> <p>(D) <math>\frac{2^6}{2^2}</math></p> <p>(E) <math>2^6</math></p>
Answer	C, E
MAFS.8.EE.1.1	
2	<p>An equation is shown.</p> $(5^a)^b = 5^{-8}$ <p>Select all of the possible values for <math>a</math> and <math>b</math>.</p> <p>(A) <math>a = -6, b = -2</math></p> <p>(B) <math>a = -1, b = 8</math></p> <p>(C) <math>a = -6, b = 2</math></p> <p>(D) <math>a = -4, b = -4</math></p> <p>(E) <math>a = -2, b = 4</math></p>
Answer	B, E

<b>MAFS.8.EE.1.2</b>	
<b>3</b>	<p>What is the value of <math>x</math> in the equation shown?</p> $x^3 = 125$ <p><math>x =</math> _____</p>
<b>Answer</b>	5
<b>MAFS.8.EE.1.2</b>	
<b>4</b>	<p>Which number has an irrational square root?</p> <p>(A) <math>\frac{1}{9}</math></p> <p>(B) 4</p> <p>(C) 0.01</p> <p>(D) 2</p>
<b>Answer</b>	D
<b>MAFS.8.EE.1.3</b>	
<b>5</b>	<p>The number 0.0000657 can be estimated by 7 times a power of 10. What is the power of 10?</p> <p>_____</p>
<b>Answer</b>	-5

<b>MAFS.8.EE.1.3</b>	
<b>6</b>	<p>The Pacific Ocean contains about 170,000,000 mi<sup>3</sup> of water. The Atlantic Ocean contains about 78,000,000 mi<sup>3</sup> of water. Which expression can you use to estimate how many times more water is in the Pacific Ocean than the Atlantic Ocean?</p> <p>(A) <math>\frac{8 \times 10^7}{2 \times 10^8}</math></p> <p>(B) <math>\frac{2 \times 10^9}{8 \times 10^8}</math></p> <p>(C) <math>\frac{8 \times 10^8}{2 \times 10^9}</math></p> <p>(D) <math>\frac{2 \times 10^8}{8 \times 10^7}</math></p>
<b>Answer</b>	D
<b>MAFS.8.EE.1.4</b>	
<b>7</b>	<p>What is the sum of <math>5.42 \times 10^5</math> and <math>7.62 \times 10^5</math> written in standard form?</p> <p>_____</p>
<b>Answer</b>	1,304,000
<b>MAFS.8.EE.1.4</b>	
<b>8</b>	<p>A beehive can contain <math>1.5 \times 10^4</math> bees. How many bees can 80 beehives contain? Express your answer in exponent form.</p> <p>_____ bees</p>
<b>Answer</b>	$1.2 \times 10^6$

MAFS.8.EE.3.8b	
<b>9</b>	<p>Solve the system of equations.</p> $6x - 4y = 15$ $4x - 8y = 2$
<b>Answer</b>	(3.5, 1.5)
MAFS.8.F.1.1	
<b>10</b>	<p>Choose the description of the graph shown.</p>  <p>The graph shows a coordinate plane with x and y axes. The x-axis is labeled 'x' and has tick marks at -4, -2, 0, 2, 4, 6, and 8. The y-axis is labeled 'y' and has tick marks at -4, -2, 0, 2, and 4. The origin is labeled 'O'. There are four points plotted: (-2, -3), (0, -3), (8, -3), and (8, 2).</p> <p>Ⓐ The graph represents a function because each input has exactly one output.</p> <p>Ⓑ The graph does not represent a function because not every input has an output.</p> <p>Ⓒ The graph does not represent a function because two inputs, <math>x = -2</math> and <math>x = 0</math>, have the same output <math>y = -3</math>.</p> <p>Ⓓ The graph does not represent a function because the input <math>x = 8</math> has two outputs, <math>y = -3</math> and <math>y = 2</math>.</p>
<b>Answer</b>	D

**MAFS.8.F.1.1**

**11** Select all of the sets of ordered pairs that represent a function.

- Ⓐ  $(2,6),(-7,-4),(10,3),(0,3)$
- Ⓑ  $(6,7),(-7,8),(-3,8),(3,-5)$
- Ⓒ  $(-2,-6),(-6,-10),(-6,7),(3,2)$
- Ⓓ  $(-9,-1),(3,-5),(-9,1),(5,9)$
- Ⓔ  $(-8,-6),(-5,5),(4,7),(4,-7)$

**Answer** A, B

**MAFS.8.F.2.4**

**12** A musician has a linear pricing plan. The total cost,  $y$ , of hiring the musician for  $x$  hours is shown.

Hourly Rates	
Hours ( $x$ )	Cost ( $y$ )
1	85
2	150
3	215
4	280
5	345

**Part A.** What is the hourly rate for the pricing plan?

\$ \_\_\_\_\_

**Part B.** Complete the equation that represents the pricing plan.

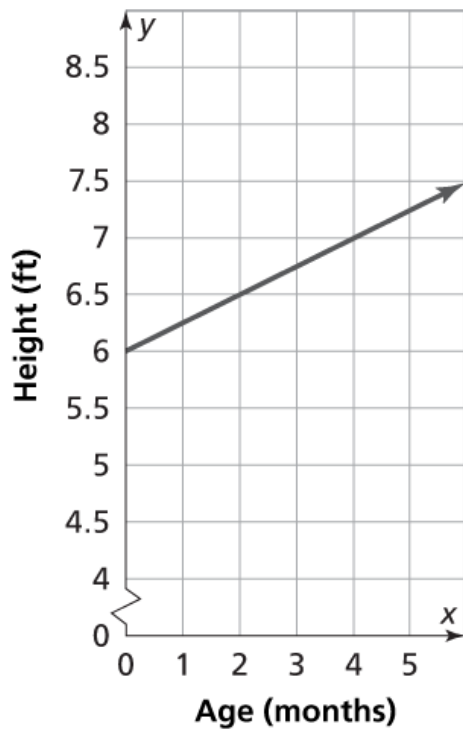
$y =$  \_\_\_\_\_  $x +$  \_\_\_\_\_

**Answer** Part A: 65 Part B:  $y = 65x + 20$



13

The graph shows the height  $y$  of a giraffe at age  $x$  months.



Select all of the true statements.

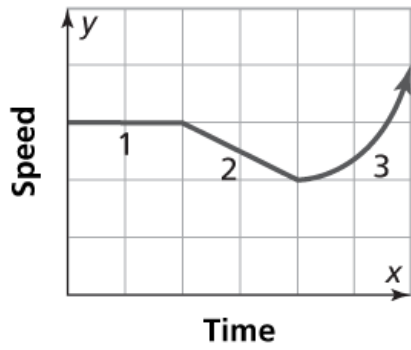
- A The equation  $y = 6x + 0.25$  represents the giraffe's height over time.
- B The rate of change is 0.25 ft per month. This means that at 2 months, the giraffe is 0.5 ft tall.
- C The initial value is 6 ft. This means that the giraffe was 6 ft tall when he was born.
- D When he is 3 years old, the giraffe will be 15 ft tall.
- E When he is 3 years old, the giraffe will be 6.75 ft tall.

**Answer**

C, D

**MAFS.8.F.2.5**

**14** The graph shows the speed of a car as time increases. Select the correct description of the car's speed for each interval.

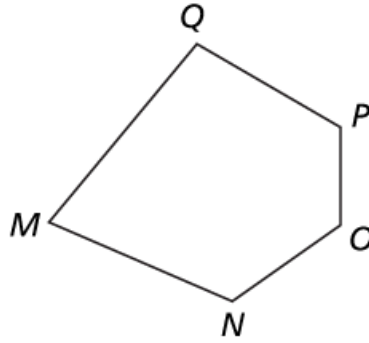
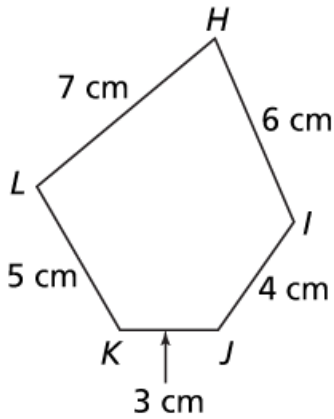


	Decreasing	Constant	Nonlinear
<b>Interval 1</b>	(A)	(B)	(C)
<b>Interval 2</b>	(D)	(E)	(F)
<b>Interval 3</b>	(G)	(H)	(I)

**Answer** B, D, I

MAFS.8.G.1.1a

15 Pentagon  $Hijkl$  is rotated about vertex  $K$  and reflected over a vertical line to produce pentagon  $MNOPQ$ .



Match each side with its length.

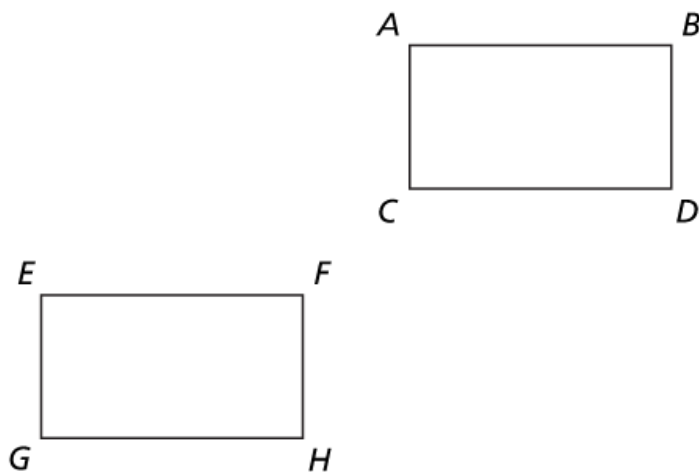
	7 cm	4 cm	6 cm	3 cm	5 cm
<b><i>MN</i></b>	(A)	(B)	(C)	(D)	(E)
<b><i>NO</i></b>	(F)	(G)	(H)	(I)	(J)
<b><i>OP</i></b>	(K)	(L)	(M)	(N)	(O)
<b><i>PQ</i></b>	(P)	(Q)	(R)	(S)	(T)
<b><i>MQ</i></b>	(U)	(V)	(W)	(X)	(Y)

Answer C, G, N, T, U

MAFS.8.F.G.1.1a, MAFS.8.G.1.1b

16

Rectangle  $ABCD$  and its transformation  $EFGH$  are shown.

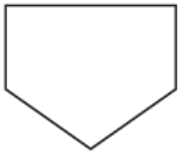



Select all of the transformations of rectangle  $ABCD$  that can produce rectangle  $EFGH$ .

- A A reflection over a vertical line and a translation.
- B A rotation about point  $D$ .
- C A rotation about a point between the two rectangles.
- D A reflection over a horizontal line.
- E A vertical and horizontal translation.

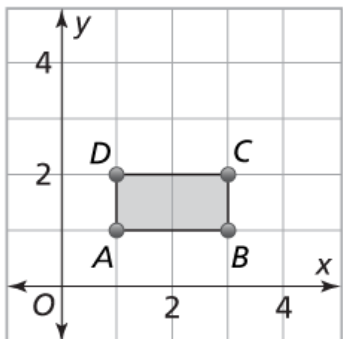
Answer

A, C, E

<b>MAFS.8.G.1.2</b>	
<b>17</b>	<p>A sequence of transformations maps Figure 1 onto Figure 2.</p> <div style="text-align: center;"> <p>Figure 2</p>     <p>Figure 1</p> </div> <p>Which sequence could have been used?</p> <p>Ⓐ A 90-degree rotation clockwise, then a translation up and left.</p> <p>Ⓑ A reflection over a horizontal line, then a translation left.</p> <p>Ⓒ A reflection across a vertical line, then a translation up.</p> <p>Ⓓ A translation left and up.</p>
<b>Answer</b>	<b>B</b>
<b>MAFS.8.G.1.2</b>	
<b>18</b>	<p>Select all of the sequences of transformations that always maintain congruence.</p> <p>Ⓐ A translation and then a rotation.</p> <p>Ⓑ A rotation and then a translation.</p> <p>Ⓒ A translation and then a reflection.</p> <p>Ⓓ A rotation and then a reflection.</p> <p>Ⓔ A reflection and then a translation.</p> <p>Ⓕ A reflection and then a rotation.</p>
<b>Answer</b>	<b>A, B, C, D, E, F</b>

**MAFS.8.G.1.3**

**19** Quadrilateral  $ABCD$  is dilated with a center of  $(0,0)$  and a scale factor of 4. It is then translated 2 units to the left. The resulting figure is  $A'B'C'D'$ . Match each point with its coordinates.

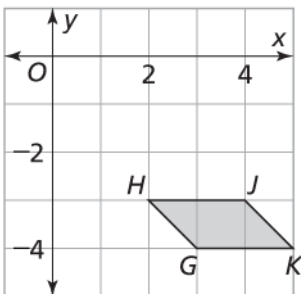


	(14,4)	(10,4)	(10,8)	(2,8)	(4,4)	(2,4)
$A'$	(A)	(B)	(C)	(D)	(E)	(F)
$B'$	(G)	(H)	(I)	(J)	(K)	(L)
$C'$	(M)	(N)	(O)	(P)	(Q)	(R)
$D'$	(S)	(T)	(U)	(V)	(W)	(X)

**Answer** F, H, O, V

**MAFS.G.8.1.3**

**20** Figure  $GHJK$  is rotated  $180^\circ$  about  $(0,0)$  and then translated 2 units up. What are the coordinates  $K'$ ?



- (A) (4, 7)
- (B) (-5, 6)
- (C) (-5, 2)
- (D) (-4, -3)

**Answer** B

**MAFS.8.G.1.3**

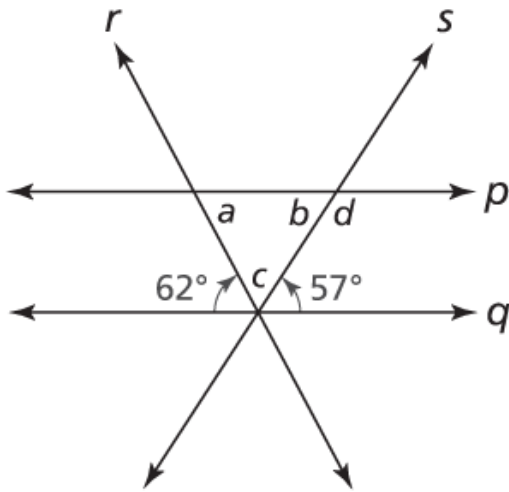
**21** A quadrilateral is reflected over the  $y$ -axis. Which of the following statements about the coordinates of the image are true?

- (A) Both the  $x$ -values and  $y$ -values change.
- (B) Both the  $x$ -values and  $y$ -values change.
- (C) Only the  $y$ -values change.
- (D) Only the  $x$ -values change.

**Answer** D

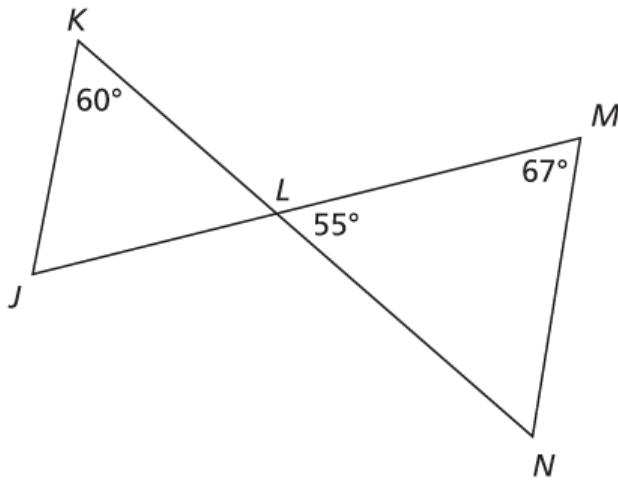
**MFAS.8.G.1.5**

**22** In the figure,  $p$  and  $q$  are parallel lines. What are the values of  $a$ ,  $b$ ,  $c$ , and  $d$ ?



	123°	57°	61°	62°
<b>a</b>	(A)	(B)	(C)	(D)
<b>b</b>	(E)	(F)	(G)	(H)
<b>c</b>	(I)	(J)	(K)	(L)
<b>d</b>	(M)	(N)	(O)	(P)

**Answer** D, F, K, M

**MFAS.8.G.1.5****23**Select all of the statements that are true about  $\triangle JKL$  and  $\triangle LMN$ .

- (A) They have only one pair of congruent angles.
- (B) The triangles are similar.
- (C)  $m\angle JKL = m\angle LNM$
- (D)  $m\angle KJL = 65^\circ$
- (E)  $m\angle LNM = 58^\circ$

**Answer**

A, D, E

**MFAS.8.G.2.8****24**

Krystal lives 12 miles south of the school. Howard lives 5 miles east of the school. How far does Howard walk if he takes the shortest path to Krystal's house?

\_\_\_\_\_ mi

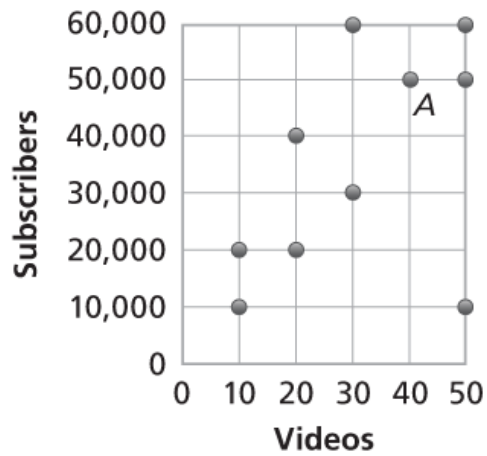
**Answer**

13



**MFAS.8.G.SP.1.1**

25 The scatter plot shows the number of subscribers a sewing video channel has in relation to the number of videos created.



How can this association be described?

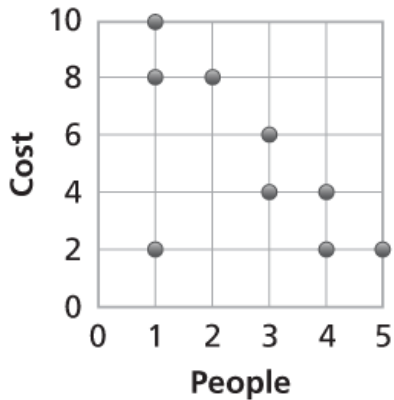
- A The association is positive, non-linear, and has an outlier.
- B The association is positive, linear, and has an outlier.
- C The association is positive, linear, and without outliers.
- D The association is negative, linear, and has an outlier.

Answer

B

**MFAS.8.SP.1.1**

**26** A chef is calculating if it is cheaper (per person) to cook for more people at once. The scatter plot shows cost per person to cook a meal in relation to the number of people being served that meal.



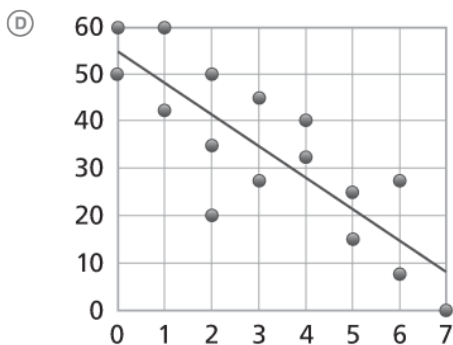
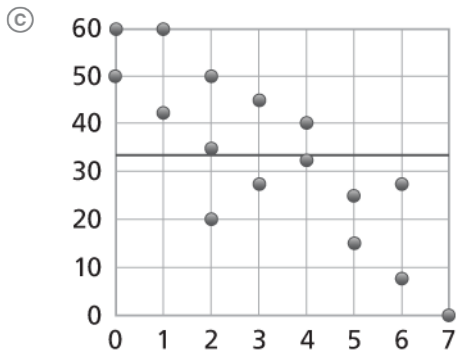
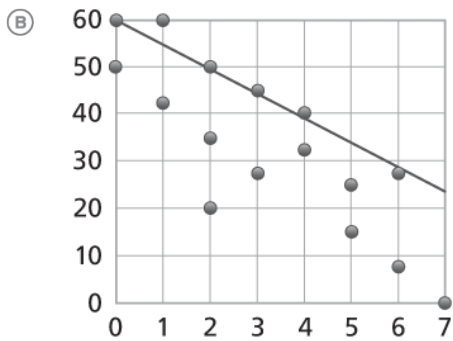
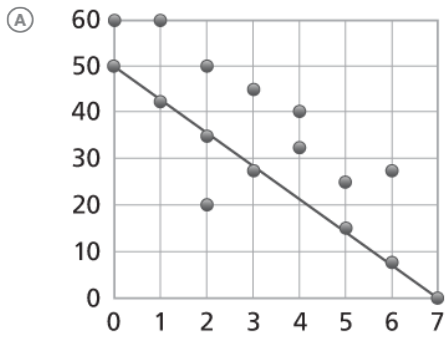
Select the correct description for the general trend of the plot.

- (A) As the number of people increases, the cost per meal increases.
- (B) As the number of people decreases, the cost per meal decreases.
- (C) As the number of people increases, the cost per meal stays the same.
- (D) As the number of people increases, the cost per meal decreases.

**Answer** D

27

Which graph represents the line of best fit for the scatter plot?

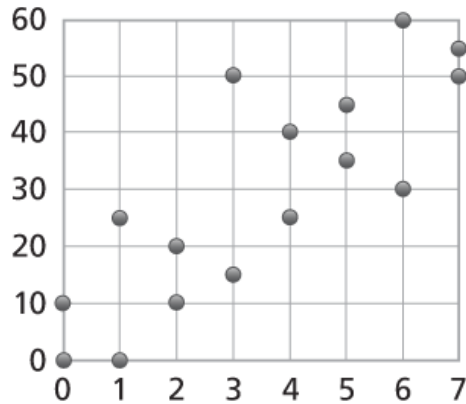


Answer

D

**MFAS.8.SP.1.2**

**28** Can you use a trend line to describe the relationship between the two sets of data for this graph? Explain.



- (A) Yes, because there is a negative linear association, although it is weak.
- (B) No, because no line could be drawn that passes through all of the points on the scatter plot.
- (C) No, because there is no linear association.
- (D) Yes, because there is a positive linear association, although it is weak.

**Answer** D

**MFAS.8.SP.1.3**

29 The data in the table show the sale price of homes with different numbers of bedrooms.

$x$	$y$
5	150,000
5	130,000
3	120,000
6	210,000

The equation of the trend line is  $y = 25,789x + 30,000$ . What does the slope represent in this situation?

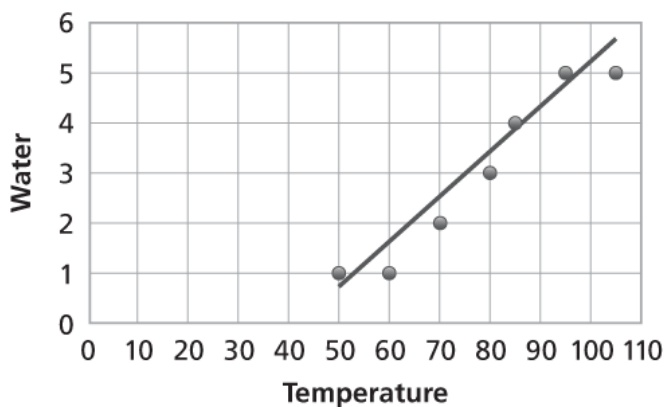
- (A) The predicted sale price of a house with 0 bedrooms is \$25,789.
- (B) The predicted sale price of a house with no bedrooms is \$30,000.
- (C) For each additional bedroom a house has, the sale price is predicted to increase by \$25,789.
- (D) For each additional bedroom a house has, the sale price is predicted to increase by \$30,000.

**Answer**

C

**MFAS.8.SP.1.3**

30 The scatter plot shows how much water 7 people drink (in glasses) given different temperatures (in degrees Fahrenheit). The equation of the trend line  $y = 0.09x - 3.77$ .



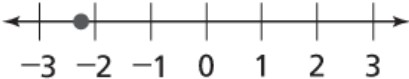
If a person drank 3 glasses of water, what was the temperature? Round your answer to the nearest tenth, if needed.

\_\_\_\_\_ °F


**Answer**

75.2

<b>MFAS.8.NS.1.1</b>	
<b>31</b>	<p>Which number represents <math>1.\overline{18}</math> written as a fraction?</p> <p>(A) <math>\frac{59}{50}</math></p> <p>(B) <math>\frac{107}{90}</math></p> <p>(C) <math>\frac{118}{100}</math></p> <p>(D) <math>\frac{13}{11}</math></p>
<b>Answer</b>	D
<b>MFAS.8.NS.1.1</b>	
<b>32</b>	<p>Select all numbers that are rational.</p> <p>(A) <math>9.\overline{812}</math></p> <p>(B) <math>4\pi</math></p> <p>(C) <math>\sqrt{11}</math></p> <p>(D) 7.4</p> <p>(E) <math>-\frac{748}{3}</math></p>
<b>Answer</b>	A, D, E

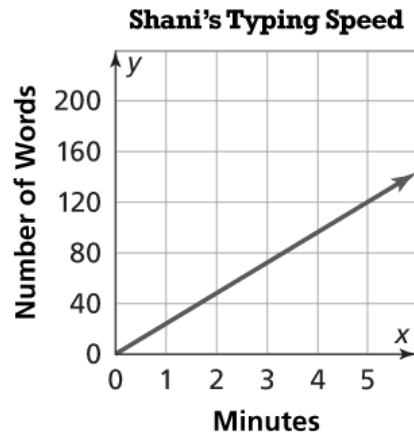
MFAS.8.NS.1.2	
<b>33</b>	<p>In which list are the numbers in order from least to greatest?</p> <p>(A) <math>\frac{5}{6}, \sqrt{5}, 4.57, \pi^2</math></p> <p>(B) <math>\frac{5}{6}, 4.57, \sqrt{5}, \pi^2</math></p> <p>(C) <math>\sqrt{5}, \frac{5}{6}, 4.57, \pi^2</math></p> <p>(D) <math>\pi^2, 4.57, \sqrt{5}, \frac{5}{6}</math></p>
<b>Answer</b>	A
MFAS.8.NS.1.2	
<b>34</b>	<p>Which value is closest to the point shown on the number line?</p>  <p>(A) <math>-\pi</math></p> <p>(B) <math>-\sqrt{5}</math></p> <p>(C) <math>-\sqrt{10}</math></p> <p>(D) <math>-2</math></p>
<b>Answer</b>	B

# FSA Grade 8 Practice (CALCULATOR)

MAFS.8.EE.2.5 

1 Lehana and Shani are having a competition to see who can type a 1,000-word essay faster. The results are shown.

Lehana's Typing Speed				
Minutes	3	6	9	12
Words	90	180	270	360



Select all of the true statements.

- A Lehana will finish typing in approximately 11 minutes and 7 seconds.
- B Lehana's unit rate is 90 words per minute.
- C A graph of Lehana's words per minute would have a greater slope.
- D Shani will finish typing in 41 minutes and 40 seconds.
- E Lehana will finish typing first.

Answer C, D, E

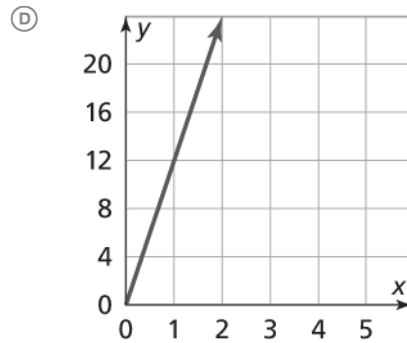
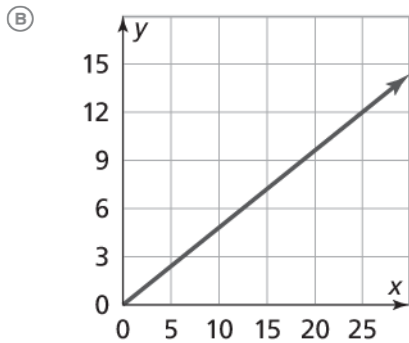
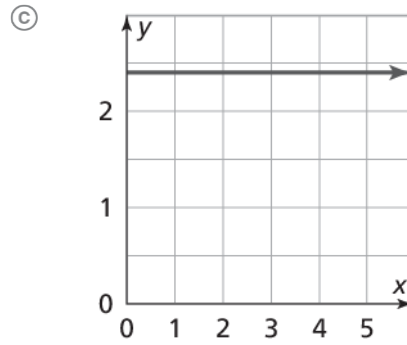
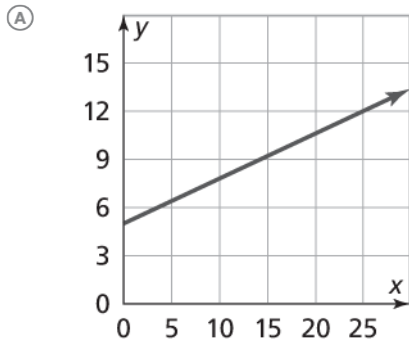


2

This question has **two** parts.

Water is poured into a large bucket at a rate of 2.4 gallons in 5 minutes.

**Part A.** Which graph models the situation?



**Part B.** At what rate is the bucket filling with water? Enter your answer as a decimal number.

\_\_\_\_\_ gallons per minute

**Answer**

Part A: B, Part B: 0.48

**MAFS.8.EE.2.5**

3 Juan and Carmelita are making paper airplanes for a school project. The number of paper airplanes that Juan makes in  $x$  hours can be modeled by the equation  $y = 6x$ .

The number of paper airplanes Carmelita makes is shown in the table.

Paper Airplanes Made			
Hours	0.25	0.5	0.75
Number of Planes	2	4	6

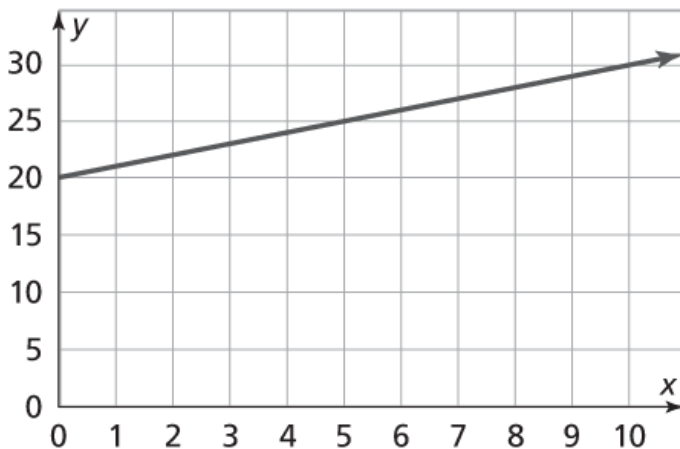
How many more paper airplanes does the faster person make per hour?

\_\_\_\_\_ more planes per hour

Answer 2

**MAFS.8.EE.2.6**

4 Write an equation that represents the same relationship as the graph shown. Enter your answers as decimals.



$y =$  \_\_\_\_\_  $x +$  \_\_\_\_\_

Answer  $y = x + 20$

**MAFS.8.EE.2.6** 

5 A plant requires 4 cups of water when it is first brought inside and then 2 cups of water each week for the rest of its life. Write a linear equation for the number of cups of water used after  $x$  months.

$$y = \underline{\hspace{2cm}} x + \underline{\hspace{2cm}}$$

**Answer**  $y = 2x + 4$

**MAFS.8.EE.2.6** 

6 What is the equation of the line representing the proportional relationship in the table? Enter your answers as decimals.

$x$	$y$
2	1
8	4
14	7
20	10

$$y = \underline{\hspace{2cm}} x + \underline{\hspace{2cm}}$$

**Answer**  $y = 1/2x + 0$

**MAFS.8.EE.3.7a** 

7 Select all equations that have exactly one solution.

- (A)  $2x - 4 = x + 1 + x$
- (B)  $6x - 2x = 4x$
- (C)  $5x - 2 = 2x + 6 - x$
- (D)  $2x + 6 = x$
- (E)  $4x - x = 9$

**Answer** C, D, E

**MAFS.8.EE.3.7b** 

8 Solve the equation shown for  $x$ .

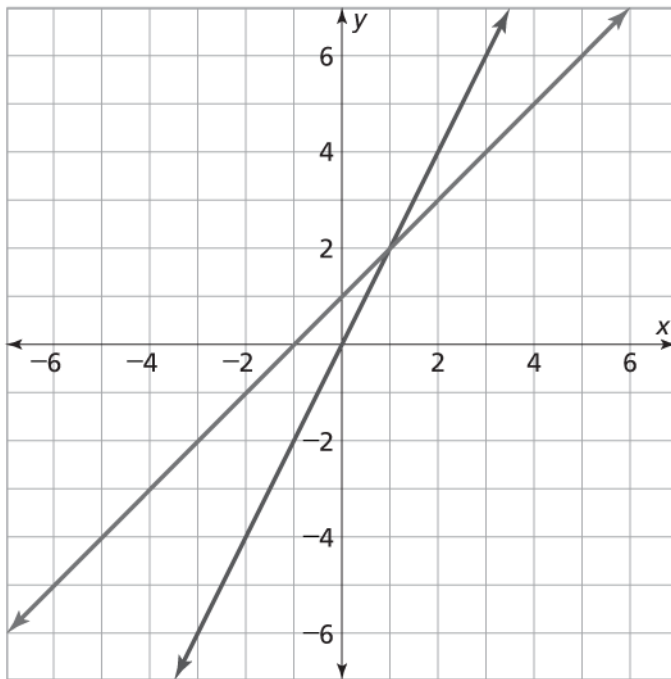
$$4x + 8 + \frac{1}{2}(2x - 4) = 6x + 6 - 4x$$

- (A) No solution
- (B)  $x = \frac{2}{3}$
- (C)  $x = 0$
- (D)  $x = -3$

**Answer** C



**MAFS.8.EE.3.8a**

9 A graph of a system of two equations is shown.



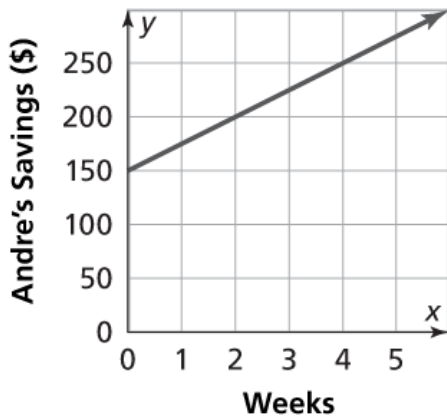
What is the solution of the system?

**Answer** (1, 2)

MAFS.8.EE.3.8b 	
<b>10</b>	<p>Select all of the systems of equations that do <b>not</b> have exactly one solution.</p> <p>Ⓐ <math>-4x + 6y = -10</math> <math>5x - 6y = 11</math></p> <p>Ⓑ <math>3x + 8y = 0</math> <math>3x + 8y = 14</math></p> <p>Ⓒ <math>y = 2x + 1</math> <math>y = 2x - 1</math></p> <p>Ⓓ <math>2y + 2 = 4x</math> <math>y = 2x - 1</math></p> <p>Ⓔ <math>y = -2x + 2</math> <math>y = 2x + 3</math></p>
<b>Answer</b>	B, C, D
MAFS.8.EE.3.8c 	
<b>11</b>	<p>At Katya's fruit stand, a basket of strawberries costs \$4 and a basket of raspberries costs \$9. In one morning, Katya sells 96 baskets for \$644. How many baskets of strawberries were sold?</p> <p style="text-align: center;">_____ baskets</p>
<b>Answer</b>	44

**MAFS.8.F.1.2** 

**12** The savings accounts of two people can be modeled by linear functions. Zahava has \$200 and saves \$20 per week. Andre’s savings are shown in the graph. Select the true statement.



- (A) Zahava has less money initially. The rate of change of her account is less than that of Andre’s.
- (B) Zahava has less money initially. She saves more per week than Andre.
- (C) Zahava has a greater initial amount saved. She saves less per week than Andre.
- (D) Zahava has a greater initial amount. The rate of change of her account is greater than that of Andre’s.

**Answer** C

**MAFS.8.F.1.2** 

**13** Select the statement that accurately compares the two linear functions.

**Function 1**


<b>x</b>	1	2	3	4
<b>y</b>	5	8	11	14

**Function 2**

$$y = \frac{5}{3}x + 3$$

- (A) Function 2 has the greatest rate of change and the greatest initial value.
- (B) Function 2 has the greatest rate of change and Function 1 has the greatest initial value.
- (C) Function 1 has the greatest rate of change and the greatest initial value.
- (D) Function 1 has the greatest rate of change, and Function 2 has the greatest initial value.

**Answer** D

MAFS.8.F.1.3 

14

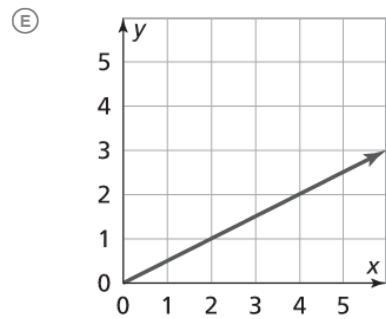
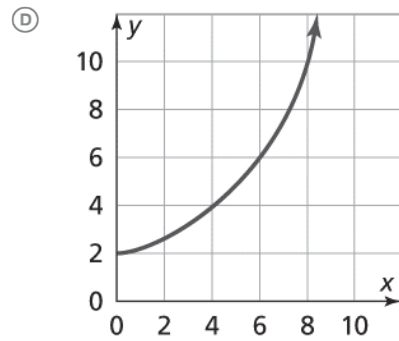
Select all of the functions that are linear.

(A)  $5x + 3y = 9$

(B)



<b>x</b>	0	1	2	3	4
<b>y</b>	0	1	8	27	64

(C)  $y = (9 + 4)x + 4$



Answer

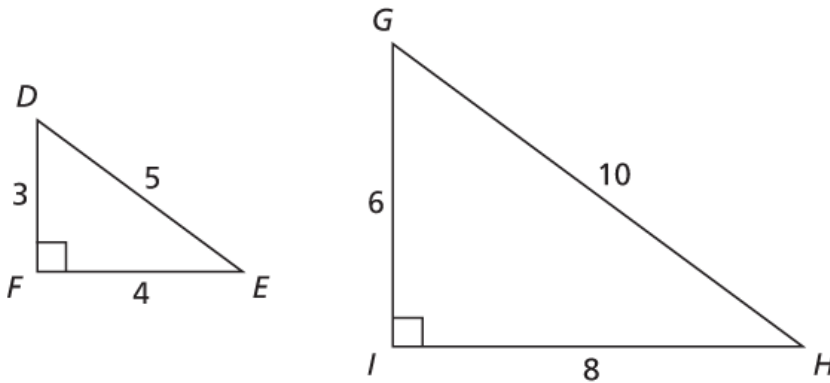
A, C, E

<b>MAFS.8.F.1.3</b> 	
<b>15</b>	<p>Laila runs 3 mi the first week. The next week, she runs 6 mi. Every week after, she runs 3 mi more than the week before.</p> <p>Select all of the true statements.</p> <ul style="list-style-type: none"> <li><input type="radio"/> A This is a nonlinear relationship because it cannot be written as an equation of the form <math>y = mx + b</math>.</li> <li><input type="radio"/> B This is a nonlinear relationship. If the number of miles Laila ran per week was graphed, it would be a curve.</li> <li><input type="radio"/> C This relationship contains the point (3,6).</li> <li><input type="radio"/> D This relationship can be modeled as a linear function and can be expressed as <math>y = 3x</math>, where <math>x</math> is the number of weeks and <math>y</math> is the number of miles Laila runs.</li> <li><input type="radio"/> E This is a linear relationship because if the number of miles Laila ran each week was graphed, it is a straight line.</li> </ul>
<b>Answer</b>	D, E
<b>MFAS.G.8.1.4</b> 	
<b>16</b>	<p>Which sequence of transformations results in figures that are similar but not congruent?</p> <ul style="list-style-type: none"> <li><input type="radio"/> A <math>270^\circ</math> rotation, reflection across the <math>x</math>-axis.</li> <li><input type="radio"/> B Translation 3 units up, <math>180^\circ</math> rotation.</li> <li><input type="radio"/> C Reflection across the line <math>y = 2</math>, translation 2 units left.</li> <li><input type="radio"/> D Translation 3 units up, dilation with a factor of 3.</li> </ul>
<b>Answer</b>	D



**MFAS.8.G.1.4** 

**17** Is  $\triangle DEF$  similar to  $\triangle GHI$ ? Explain.



- (A) Yes, because  $\triangle GHI$  can be obtained by dilating  $\triangle DEF$  by a scale factor of  $\frac{1}{2}$  and then translating to the right.
- (B) No, because  $\triangle GHI$  cannot be obtained from  $\triangle DEF$  through a sequence of rotations, translations, reflections, and dilations.
- (C) Yes, because  $\triangle GHI$  can be obtained by dilating  $\triangle DEF$  by a scale factor of 2 and then translating to the right.
- (D) No. The triangles are not the same size, so they are not similar.

**Answer** C

**MFAS.8.G.2.6** 

**18** Which set of side lengths forms a right triangle?

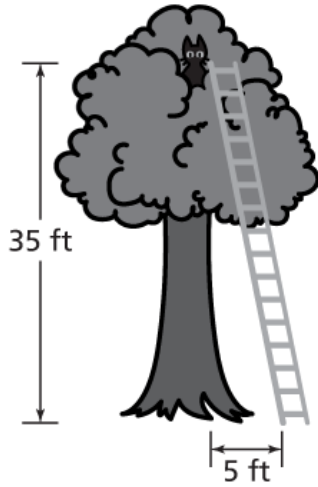
- (A) 5 in., 12 in., 11 in.
- (B) 2 cm; 4 cm; 5 cm
- (C) 6 m; 8 m; 5 m
- (D) 9 ft; 12 ft; 15 ft

**Answer** D



MFAS.8.G.2.7 

21 A man wants to rescue a cat that is stuck on a branch 35 feet up in a maple tree. The man leans his ladder so that the bottom is 5 feet away from the base of the tree trunk. How long does the ladder need to be for the man to reach the cat? Round to the nearest tenth.

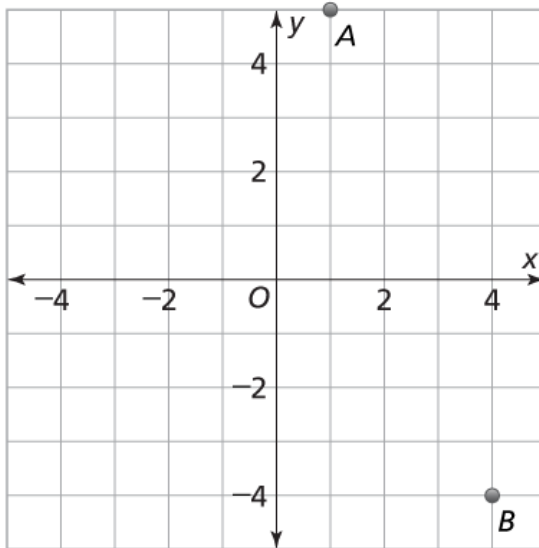


\_\_\_\_\_ ft

Answer 35.4



MFAS.8.G.2.8 

22 What is the distance between points  $A$  and  $B$  on the coordinate plane shown? Round your answer to the nearest tenth of a unit.



\_\_\_\_\_ units

Answer 9.5

<b>MFAS.8.G.3.9</b> 	
<b>23</b>	<p>A three-dimensional figure has a volume of 314 cubic centimeters rounded to the nearest cubic centimeter. Select all of the figures that match this description.</p> <p>Use 3.14 for <math>\pi</math>.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> A A cone with a radius of 10 cm and a height of 3 cm.</li> <li><input type="checkbox"/> B A cylinder with a radius of 1 cm and a height of 10 cm.</li> <li><input type="checkbox"/> C A sphere with a diameter of 4.217 cm.</li> <li><input type="checkbox"/> D A sphere with a radius of 4.217 cm.</li> <li><input type="checkbox"/> E A cylinder with a radius of 4.47 cm and a height of 5 cm.</li> </ul>
<b>Answer</b>	A, D, E
<b>MFA.8.G.3.9</b> 	
<b>24</b>	<p>If you inflate a beach ball with 14,130 cubic inches of air, what will its diameter be? Use 3.14 for <math>\pi</math>.</p> <p>_____ inches</p>
<b>Answer</b>	30

MFAS.8.SP.1.4 

25

Naomi polled 50 students at school on their favorite animal.


	Cats	Dogs	Total
Fourth-Grade Students	8	16	
Fifth-Grade Students	12	14	
Total			

For each value described, select the correct percentage (rounded to the nearest percent).

	47%	33%	20%	40%	54%	52%
Percentage of fourth-grade students that preferred cats.	(A)	(B)	(C)	(D)	(E)	(F)
Percentage of students that were fifth-grade students.	(G)	(H)	(I)	(J)	(K)	(L)
Percentage of fifth-grade students that preferred dogs.	(M)	(N)	(O)	(P)	(Q)	(R)
Percentage of students that preferred cats.	(S)	(T)	(U)	(V)	(W)	(X)

Answer

B, L, Q, V

**MFAS.8.SP.1.4** 

**26**

An amusement park surveys 260 customers to help them decide whether to add a rollercoaster or bumper cars to the park.

	<b>Like Bumper Cars</b>	<b>Do Not Like Bumper Cars</b>	<b>Total</b>
<b>Like Rollercoasters</b>	123	45	168
<b>Do Not Like Rollercoasters</b>	60	32	92
<b>Total</b>	183	77	260

What is the best decision based on the relative frequencies in the table? Round all numbers to the nearest percent.

- Ⓐ The amusement park should add a rollercoaster, because 65% of the customers surveyed like rollercoasters and 35% like bumper cars.
- Ⓑ The amusement park should add bumper cars, because 23% of the customers surveyed like bumper cars and 17% of customers like roller coasters.
- Ⓒ The amusement park should add bumper cars, because 70% of the customers surveyed like bumper cars and 30% like rollercoasters.
- Ⓓ The amusement park should add bumper cars, because 70% of the customers surveyed like bumper cars and 65% like rollercoasters.

**Answer**

**D**