



Math

Spring 2018

Grade 6

Released Items

1.

VF479602

Caleb is making a soil mix that is 8 parts dirt to 3 parts peat moss. Which of the following best describes the amount of dirt he should use for every 1 cup of peat moss?

- ☐ A. He should add between  $\frac{1}{4}$  cup and  $\frac{1}{2}$  cup of dirt.
- ☐ B. He should add between  $\frac{1}{2}$  cup and 1 cup of dirt.
- ☐ C. He should add between 1 cup and 2 cups of dirt.
- ☐ D. He should add between 2 cups and 3 cups of dirt.

2.

M22622

A worker at a frozen yogurt store has  $2\frac{3}{4}$  cups of frozen yogurt to give to customers as samples. The worker places  $\frac{1}{16}$  cup of frozen yogurt in each sample. How many samples can the worker give using all the frozen yogurt?

Enter your answer in the space provided. Enter **only** your answer.

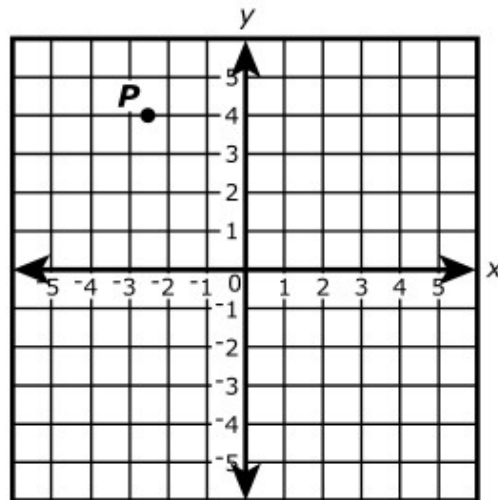


	+	-	×	÷	$\frac{\Box}{\Box}$	$\frac{\Box\Box}{\Box\Box}$
	$y^x$	$\sqrt{\Box}$	$\sqrt[3]{\Box}$	=	(.)	%

3.

M21097P

The graph shows the location of point  $P$ . The  $x$ -coordinate of point  $Q$  is equal to the opposite of the  $x$ -coordinate of point  $P$ . The  $y$ -coordinate of point  $Q$  is equal to the opposite of the  $y$ -coordinate of point  $P$ .



What are the coordinates of point  $Q$ ?

- ☐ A.  $(2.5, 4)$
- ☐ B.  $(2.5, -4)$
- ☐ C.  $(-2.5, 4)$
- ☐ D.  $(-2.5, -4)$

4.

M25361

What is the value of this expression?

$$2.4 \cdot 27.316$$

Enter your answer in the box.

5.

VH083072

Divide.

$$31,616 \div 52$$

Enter your answer in the box.

6.

VH149008

Which expressions are equivalent to  $6 + 12x$ ?

Select **each** equivalent expression.

- ☐ A.  $3(2 + 4x)$
- ☐ B.  $3(2 + 6x) + 2x$
- ☐ C.  $5(1 + 2x) + 1 + 2x$
- ☐ D.  $7(1 + 2x) - 2x - 1$
- ☐ E.  $7(1 + 2x) + 2x - 1$

7.

M20816

What is the result of 31.978 subtracted from 66.4?

Enter your answer in the box.

8.

M25339P

The cost of renting a truck is \$40. An additional \$0.79 is charged for each mile,  $m$ , the truck is driven.

Which expression can be used to determine the total cost, in dollars, of renting a truck?

- ☐ A.  $40m - 0.79$
- ☐ B.  $40m + 0.79$
- ☐ C.  $0.79m - 40$
- ☐ D.  $0.79m + 40$

9.

VH173094

A small jar of salsa contains  $12\frac{1}{2}$  ounces. A large jar of salsa contains 75 ounces.

How many small jars of salsa equal the same number of ounces as 1 large jar of salsa?

Enter your answer in the box.

10.

M22255

Suzanne purchased 3 DVDs for \$15.75 each and 1 book for \$11.98. What is the total amount Suzanne spent?

- ☐ A. \$17.23
- ☐ B. \$27.73
- ☐ C. \$59.23
- ☐ D. \$83.19

11.

VH146432

Suzanne keeps track of her company's gains and losses. This table shows the gains and losses for three months.

**Monthly Gains and Losses**

Month	Gain or Loss
January	− \$300
February	+ \$400
March	\$0

Based on the data in the table, which statements are true?

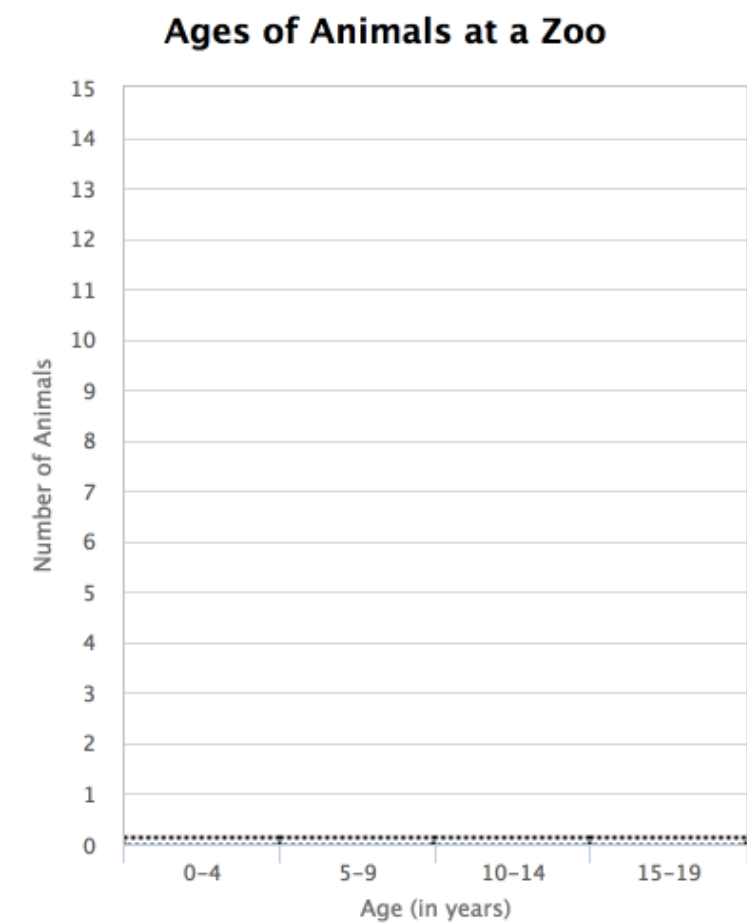
Select **all** that apply.

- ☐ A. −\$300 represents a loss of \$300
- ☐ B. −\$300 represents a gain of \$300
- ☐ C. \$0 represents a gain
- ☐ D. \$0 represents a loss
- ☐ E. \$0 represents no gain and no loss
- ☐ F. +\$400 represents a loss of \$400
- ☐ G. +\$400 represents a gain of \$400

The list shows the ages of animals at a zoo.

10	9	3	16	16	7
1	5	7	4	10	13
5	12	2	11	17	8
4	7	8	2	8	9

Plot the numbers in the list to create a histogram by dragging the top of each bar to the correct height in the chart area.



13.

VH254133

**Part A**

What is the perimeter, in units, of a polygon with vertices located at  $(-7, -3)$ ,  $(-7, 4)$ ,  $(6, -3)$ , and  $(6, 4)$ ?

Enter your answer in the box.

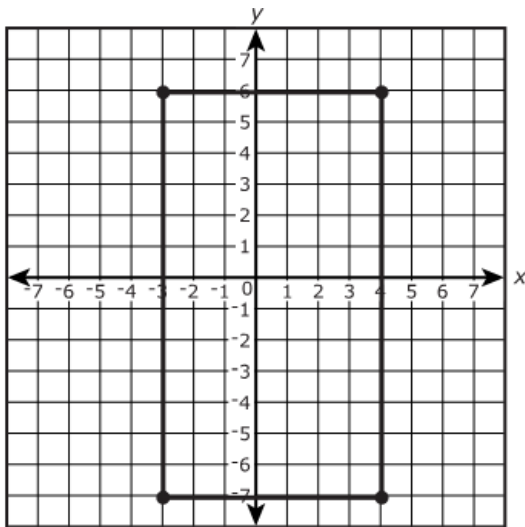
**Part B**

The polygon is graphed in the coordinate plane. These ordered pairs represent the vertices of the polygon.

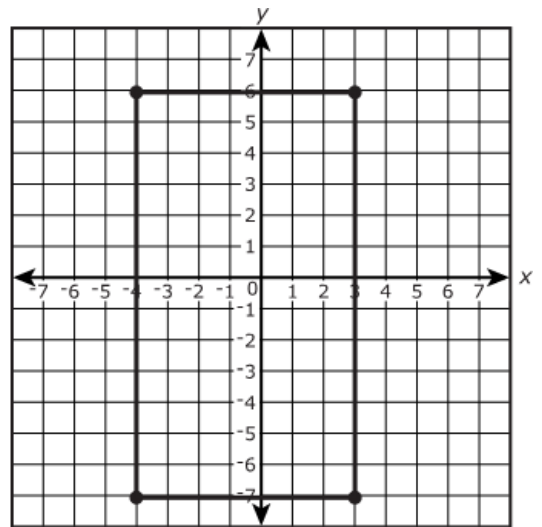
$(-7, -3)$ ,  $(-7, 4)$ ,  $(6, -3)$ ,  $(6, 4)$

Which coordinate plane best shows a polygon with vertices at these locations?

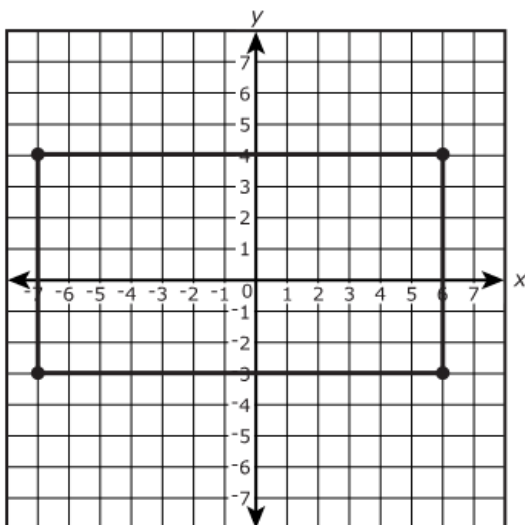
☐ A.



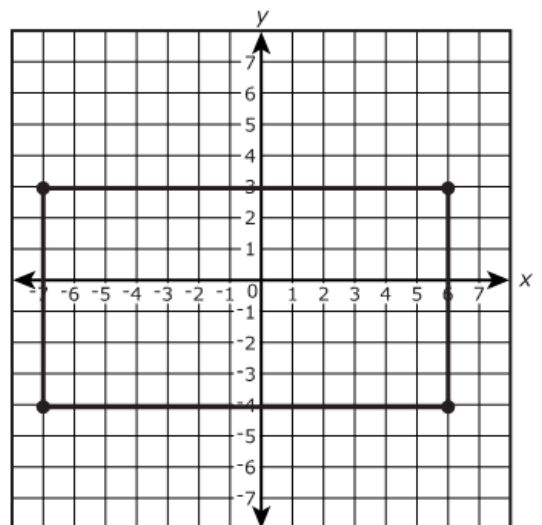
☐ B.



☐ C.



☐ D.





14.

VF556461

Which number in the set  $\{6, 12, 18, 36\}$  satisfies the equation  $3x - 9 = 27$  ?

- ☐ A.  $x = 6$
- ☐ B.  $x = 12$
- ☐ C.  $x = 18$
- ☐ D.  $x = 36$

15.

M20055

Which expressions are equivalent to 16?

Select **each** correct expression.

☐  $1^{16}$  ☐  $2^4$  ☐  $4^2$  ☐  $8^2$  ☐  $16^0$  ☐  $16^1$

16.

5073-M25459

The total cost of 5 boxes of pasta is \$13.00. There are 12 ounces of pasta in each box. Each box of pasta costs the same amount.

**Part A**

What is the **maximum** number of boxes that can be purchased with \$65.00?

Enter your answer in the box.

**Part B**

What is the cost, in dollars, of the **minimum** number of boxes needed to total 48 ounces of pasta?

Enter your answer in the box.

**Part C**

What is the cost, in dollars, for 1 **box** of pasta?

Enter your answer in the box.

**Part D**

What is the cost, in dollars, for 1 **ounce** of pasta? Round your answer to the nearest cent.

Enter your answer in the box.

17.

VF643169

Shelly ran 20 minutes and burned 130 calories.

**Part A**

Which equations can be used to find the average number of calories,  $c$ , burned per minute?

Select **each** correct answer.

☐ A.  $20c = 130$

☐ B.  $130c = 20$

☐ C.  $c = 130 \div 20$

☐ D.  $c = 20 \div 130$

☐ E.  $\frac{c}{130} = 20$

☐ F.  $\frac{c}{20} = 130$

**Part B**

How many calories did Shelly burn per minute? Write your answer as a decimal.

Enter your answer in the box.

18.

VH092898

James is using cement to make a new sidewalk and new steps.

### Part A

He will make a new rectangular sidewalk that is 8 feet long, 4 feet wide, and 0.25 foot thick.

What is the volume, in cubic feet, of the cement used to make the sidewalk?  
Show or explain all of the steps you used to determine your answer.

Enter your answer and your work or explanation in the space provided.



▼ Math symbols

+	−	×	÷
±	−	·	/
=	≠	$\frac{\Box}{\Box}$	$\frac{\Box\Box}{\Box\Box}$
$y^x$	$\sqrt{\Box}$	$\sqrt[3]{\Box}$	$\pi$
(.)	°	·	

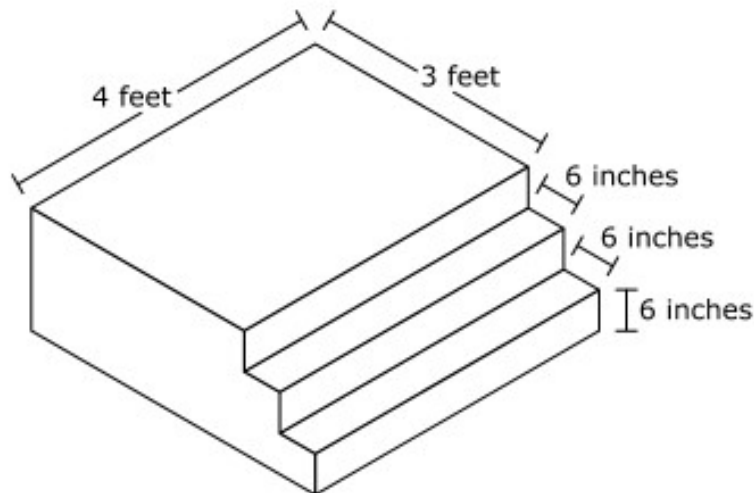
► Relations

► Geometry

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**Part B**

This diagram shows James's design for the steps. The height of each step will be 6 inches. All angles in the diagram are right angles.



What is the volume, in cubic feet, of the cement used to make the steps?  
Show or explain all of the steps you used to determine your answer.

Enter your answer and your work or explanation in the space provided.

**Math symbols****Relations****Geometry**

The table shows the number of customers who purchased snow cones at a snow-cone shop during a 10-day period.

**Customers Purchasing Snow Cones**

Number of Customers	Day
65	Monday
12	Tuesday
58	Wednesday
67	Thursday
72	Friday
68	Saturday
59	Sunday
98	Monday
72	Tuesday
61	Wednesday

**Part A**

The manager of the snow-cone shop wants to determine the typical number of customers who purchase snow cones each day.

Which sentence **best** describes the quantity the manager should compute and why?

- ☐ A. The manager should compute the mean because it is sensitive to outliers.
- ☐ B. The manager should compute the median because it is not influenced by a few outliers.
- ☐ C. The manager should compute the interquartile range because it gives the range of the middle 50% of the number of people.
- ☐ D. The manager should compute the mean absolute deviation because it gives the average distance all values are from the middle.

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**Part B**

Which numbers appear to be outliers in this data set?

Select from the drop-down menus to correctly complete the sentence.

The numbers that appear to be outliers are  and  because they

Choose...	Choose...
12	67
58	68
59	72
61	98
65	
72	

are repeated more than once

lie on either side of the median

are much greater than or less than the other values in the data set