



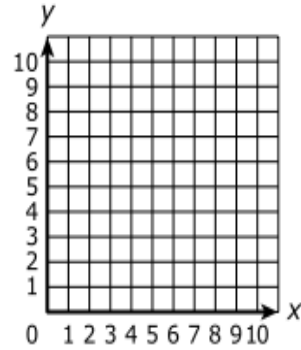
Math

Spring Operational 2016

Grade 5

Released Items

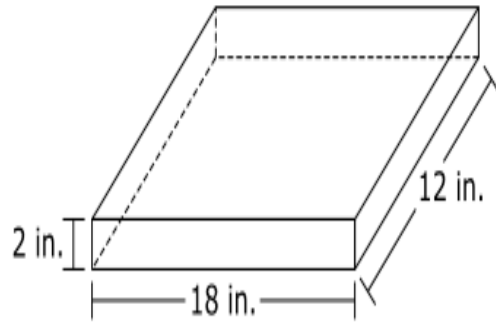
A coordinate plane is shown.



Which of these is a correct process for plotting the point (3, 6) on the coordinate plane?

- A. Start at the origin. Move 3 units up the  $y$ -axis, and then move 6 units to the right. Plot the point there.
- B. Start at the top of the  $y$ -axis. Move 3 units down the  $y$ -axis, and then move 6 units to the right. Plot the point there.
- C. Start at the origin. Move 3 units to the right on the  $x$ -axis, and then move 6 units up. Plot the point there.
- D. Start at the top of the  $y$ -axis. Move 3 units to the right, and then move 6 units down. Plot the point there.

A rectangular prism is shown.



What is the volume, in cubic inches, of the rectangular prism?

Enter your answer in the box.

 cubic inches

Which statement is true?

- A. The value of 7 in 0.75 is  $\frac{1}{10}$  the value of 7 in 0.075.
- B. The value of 7 in 7.5 is  $\frac{1}{100}$  the value of 7 in 0.75.
- C. The value of 7 in 75 is 10 times the value of 7 in 7.5.
- D. The value of 7 in 750 is 100 times the value of 7 in 75.

4

M01512

About 100,000 people live in a town. The number 100,000 can be written as  $10^n$ , where  $n$  is a whole number. What is the value of  $n$ ?

Enter your answer in the box.

5

M00301

Select the **two** values that are less than seven hundred three and forty-seven thousandths.

703.1

703.46

seven hundred three and nine-tenths

seven hundred three and one-hundredth

$$7 \times 100 + 2 \times 10 + 1 \times 1 + 0 \times \frac{1}{10} + 2 \times \frac{1}{100}$$

$$7 \times 100 + 0 \times 10 + 3 \times 1 + 0 \times \frac{1}{10} + 1 \times \frac{1}{100} + 8 \times \frac{1}{1000}$$

Identify the answer choices that represent the same value as “forty-two and nine hundred five thousandths.”

Select the **two** correct answers.

- A. 42,905
- B.  $4 \times 10 + 2 \times 1 + 9 \times \frac{1}{10} + 5 \times \frac{1}{100}$
- C. 42.095
- D.  $4 \times 10 + 2 \times 1 + 9 \times \frac{1}{10} + 5 \times \frac{1}{1000}$
- E. 42.905
- F.  $4 \times 10 + 2 \times 1 + 9 \times \frac{1}{100} + 5 \times \frac{1}{1000}$
- 

Enter your answer in the box.

$$62 \times 8,198 = \boxed{\phantom{000000}}$$

8

VF563096

Solve.

Enter your answer in the box.

$0.5 \times 1.24 =$

9

M00670

Complete the equation to show equivalent fractions with common denominators.

Drag and drop the numbers into the empty boxes.

1	2	3	4	5	6	7	8	9	14	20	24	40	48
---	---	---	---	---	---	---	---	---	----	----	----	----	----

$$\frac{1}{8} + \frac{5}{6} = \frac{\square}{\square} + \frac{\square}{\square}$$

For which of the following sums could 30 be used as a common denominator to make equivalent fractions?

Select the **three** correct sums.

A.  $\frac{1}{3} + \frac{4}{15}$

B.  $\frac{4}{9} + \frac{1}{15}$

C.  $\frac{7}{18} + \frac{1}{30}$

D.  $\frac{1}{6} + \frac{7}{30}$

E.  $\frac{8}{15} + \frac{3}{20}$

F.  $\frac{2}{5} + \frac{5}{6}$

Which expression has a value that is equivalent to  $\frac{7}{12}$  ?

- A.  $7 - 12$
  - B.  $12 - 7$
  - C.  $12 \div 7$
  - D.  $7 \div 12$
- 

Trees cover  $\frac{5}{12}$  of the land in park A. Park B has trees that cover  $\frac{3}{8}$  times as much land as park A. What fraction of park B is covered with trees?

- A.  $\frac{96}{15}$
  - B.  $\frac{8}{20}$
  - C.  $\frac{5}{32}$
  - D.  $\frac{40}{36}$
-



13

VH120270

Enter your answer in the box.

$$6 \div \frac{1}{7} = \boxed{\phantom{000}}$$

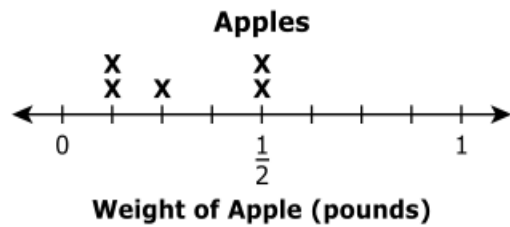
14

VF497465

Which expression represents the statement "12 divided by 3, then add 5"?

- A.  $12 \div (3 + 5)$
- B.  $3 \div 12 + 5$
- C.  $12 \div 3 + 5$
- D.  $3 + 12 \div 5$

The line plot shows the weights, in pounds, of five apples.



All five of these apples will be cut into pieces and placed in equal amounts, in pounds, into three containers for making applesauce. Each container holds 1 pound when full.

Select the diagram that shows the weight, in pounds, of apple pieces that should be placed in each container so that all three containers have the same weight.

- A. Three identical vertical containers, each with a scale from 0 to 1. Each container has a shaded bottom section representing 1/4 pound.
- B. Three identical vertical containers, each with a scale from 0 to 1. Each container has a shaded bottom section representing 1/8 pound.
- C. Three identical vertical containers, each with a scale from 0 to 1. Each container is completely shaded, representing 1 pound.
- D. Three identical vertical containers, each with a scale from 0 to 1. Each container has a shaded bottom section representing 3/8 pound.

The table shows the number of bikes sold at a store in one year.

**Bikes Sold**

Type of Bike	Number Sold	Price per Bike (dollars)
Racing Bike	933	125
Mountain Bike	542	107

**Part A**

What is the total amount earned, in dollars, from the racing bikes that were sold at the store during the year?

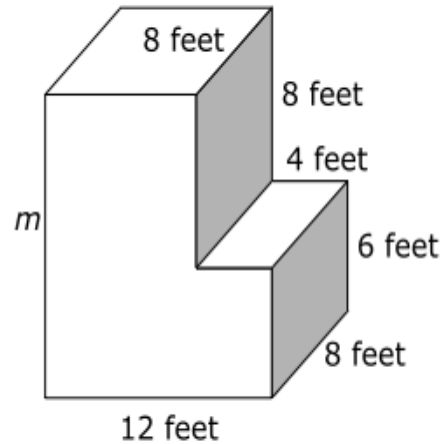
Enter your answer in the box.

**Part B**

What is the total amount earned, in dollars, from the mountain bikes that were sold at the store during the year?

Enter your answer in the box.

An art piece is made using two rectangular prisms. The side lengths of the art piece are shown. The length of one of the sides,  $m$ , is missing.



- What is the length of side  $m$ ?
- What is the volume of the art piece?

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

Length of side  $m$ :  feet

Volume of art piece:  cubic feet

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**Part A**

Which is closest to the value of  $2.3 \div 12$ ?

- A. 0.02
- B. 0.2
- C. 2
- D. 20

**Part B**

What is  $2,400 \div 12$ ?

Enter your answer in the box.

Addison has 26 cups of cat food and 31 cups of dog food.

**Part A**

Addison wants to use the same amount of cat food each day to feed her cats. She wants to use all the cat food she has before buying more. Which statement is true?

- A. If she feeds her cats for 6 days with the food she has, she uses  $4\frac{2}{26}$  cups of cat food each day.
- B. If she feeds her cats for 7 days with the food she has, she uses  $4\frac{2}{4}$  cups of cat food each day.
- C. If she feeds her cats for 8 days with the food she has, she uses  $3\frac{2}{8}$  cups of cat food each day.
- D. If she feeds her cats for 10 days with the food she has, she uses  $2\frac{1}{6}$  cups of cat food each day.

**Part B**

Addison uses up all the dog food in 6 days. Each day, she feeds her dogs the same amount of food. Between which two numbers is the number of cups of food she feeds her dogs each day?

- A. 0 and 1
- B. 1 and 2
- C. 5 and 6
- D. 6 and 7

Mason has  $\frac{1}{8}$  pound of cheese to put on top of 4 tacos. He puts the same amount of cheese on each taco.

**Part A**

Using  $c$  to represent the fraction of a pound of cheese that Mason uses for each taco:

- Write a multiplication equation that can be used to find the fraction of a pound of cheese that Mason uses for each taco.
- Write a division equation that can be used to find the fraction of a pound of cheese that Mason uses for each taco.

Enter your equations in the space provided.



▼ Math symbols

+	-	×	÷
$\frac{\square}{\square}$	$\square \square$	(-)	[ ]
=	<	>	≠
\$	°	?	

**Part B**

Explain why both equations result in the same value for  $c$ , the fraction of a pound of cheese Mason uses for each taco. Include the value of  $c$  in your explanation.

Enter your explanation in the space provided.



▼ Math symbols

+	-	×	÷
$\frac{\square}{\square}$	$\square \square$	(-)	[ ]
=	<	>	≠
\$	°	?	

A student finds the sum of  $87.92 + 32.11 + 63.08 + 54.89$  by adding the sums of  $87.92 + 63.08$  and  $32.11 + 54.89$ .

**Part A**

Explain why the student's strategy can be used to find the sum of  $87.92 + 32.11 + 63.08 + 54.89$ .

Enter your explanation in the space provided.



▼ Math symbols

**Part B**

Describe or show another strategy for finding the sum of  $87.92 + 32.11 + 63.08 + 54.89$  that can be done using pencil and paper. Include the sum of  $87.92 + 32.11 + 63.08 + 54.89$  in your explanation.

Enter your strategy and your sum in the space provided.



▼ Math symbols





After a class lunch, the class has  $\frac{9}{16}$  gallon of soup left over. They give  $\frac{3}{8}$  gallon of this soup to the school office.

A student says they now have  $\frac{3}{4}$  gallon of soup left over because when you subtract the numerators and denominators, the difference is  $\frac{6}{8}$ , and  $\frac{6}{8}$  is equivalent to  $\frac{3}{4}$  when you divide both the numerator and denominator by 2.

Explain the error in reasoning that the student made.

Explain how to correct the error. Include the correct amount of soup, in gallons, that is left over after giving soup to the school office in your explanation.

Enter your answer and your explanations in the space provided.



▼ Math symbols

+	-	×	÷
$\frac{\square}{\square}$	$\frac{\square}{\square}$	(.)	[.]
=	<	>	≠
\$	°	?	

A student solves this subtraction problem.

$$\begin{array}{r} \phantom{6,}^3 \phantom{0}^{13} \\ 6,40\cancel{3} \\ -3,209 \\ \hline 3,104 \end{array}$$

This is the reasoning the student used.

- You cannot take 9 ones away from 3 ones, so you need to get more ones.
- You cannot take any ones from 0 tens, so you skip to the hundreds. That makes 3 hundreds and 13 ones.
- You subtract 9 ones from 13 ones to get 4 ones.
- You subtract 0 tens from 0 tens to get 0 tens.
- You subtract 2 hundreds from 3 hundreds to get 1 hundred.
- You subtract 3 thousands from 6 thousands to get 3 thousands.

### Part A

Explain what is correct about the reasoning the student used to subtract the numbers.

Enter your explanation in the space provided.



Math symbols



### Part B

Explain the error in the reasoning the student used to subtract the numbers. Then explain how to correct the error. Include the correct difference in your explanation.

Enter your answer and your explanation in the space provided.



Math symbols



Dana is making bean soup. The recipe she has makes 10 servings and uses  $\frac{3}{4}$  of a pound of beans. How many total pounds of beans does she need to make 5 servings of soup?

She has  $\frac{1}{16}$  of a pound of beans in one container and  $\frac{1}{4}$  of a pound of beans in another container. How many more pounds of beans does Dana need to make the 5 servings of soup? Show your work or explain your answer.

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



▼ Math symbols




+	-	×	÷
$\frac{\square}{\square}$	$\frac{\square}{\square}$	(·)	[·]
=	<	>	≠
\$	°	?	

**Part A**

Kayla, Jim, and Maria each ran after school last week. Kayla ran  $\frac{2}{3}$  mile each day after school for 5 days.

How many total miles did Kayla run last week?

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




	+	-	×	÷	$\frac{\square}{\square}$	$\frac{\square\square}{\square\square}$
	=	<	>	(-)	[ ]	\$
						

**Part B**

Last week Jim trained to run long distance. Each day, he ran  $\frac{3}{4}$  mile before and  $\frac{3}{4}$  mile after school for 5 days.

How many total miles did Jim run last week?

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

	+	-	×	÷	$\frac{\square}{\square}$	$\frac{\square\square}{\square\square}$
	=	<	>	(-)	[ ]	\$
						

**Part C**

Maria ran  $\frac{3}{4}$  mile each day for 3 days and  $\frac{1}{4}$  mile each day for 2 days.

How many total miles did Maria run last week?

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

	+	-	×	÷	$\frac{\square}{\square}$	$\frac{\square}{\square}$
	=	<	>	(-)	[ ]	\$

**Part D**

This week, Kayla, Jim, and Maria ran after school for 4 days. They recorded how far they ran each day in the table.

**Total Distance Ran**

Day	Kayla (in miles)	Jim (in miles)	Maria (in miles)
1	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{3}{8}$
2	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{1}{8}$
3	$\frac{2}{4}$	$\frac{1}{2}$	$\frac{5}{8}$
4	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{7}{8}$

Who ran the farthest? Explain your answer. Be sure to provide support for your explanation.

Enter your answer and your explanation in the space provided.

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▼ Math symbols

+	-	×	÷
$\frac{\square}{\square}$	$\frac{\square}{\square}$	(-)	[ ]
=	<	>	≠
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