

≡

1

Enter the value of $\frac{3}{4} + \frac{7}{12} - (-4)$.

←	→	↶	↷	✕			
1	2	3	+	-	*	÷	
4	5	6	<	≤	=	≥	>
7	8	9	$\frac{\square}{\square}$	\square^\square	()		π
0	.	-					

2

Mark buys a wooden board that is $7\frac{1}{2}$ feet long. The cost of the wooden board is \$0.50 per foot, including tax.

Enter the total cost, in dollars, of the wooden board.

←	→	↶	↷	✕	
1	2	3			
4	5	6			
7	8	9			
0	.	-			

5



Enter the value of the expression.

$$2.3 \cdot (4 + 12)$$

← → ↶ ↷ ✖

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

6



Enter the value of p so the expression $\frac{5}{6} - \frac{1}{3}n$ is equivalent to $p(5 - 2n)$.

← → ↶ ↷ ✖

1	2	3	+	-	*	÷	
4	5	6	<	≤	=	≥	>
7	8	9	$\frac{\square}{\square}$	\square^\square	()		π
0	.	-					

9 ☰

Alex claims that when $\frac{1}{4}$ is divided by a fraction, the result will be greater than $\frac{1}{4}$.

To convince Alex that this statement is only sometimes true:

Part A: Drag one digit into each box to create an expression that is greater than $\frac{1}{4}$.

Part B: Drag one digit into each box to create an expression that is **not** greater than $\frac{1}{4}$.

1 ⊗ Delete

2

3

4

5

6

7

8

9

Part A: Expression greater than $\frac{1}{4}$

$$\frac{1}{4} \div \frac{\square}{\square}$$

Part B: Expression not greater than $\frac{1}{4}$

$$\frac{1}{4} \div \frac{\square}{\square}$$

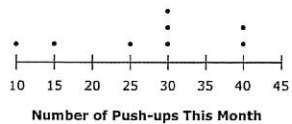
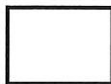
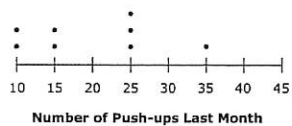
10 ☰

Which number line model represents the sum of $1\frac{1}{2} + (-\frac{1}{2})$?

13

Mr. Anthony wants to know how some student athletes are improving in the number of push-ups they can do.

These dot plots show the number of push-ups each student was able to do last month and this month.



What is the increase in the mean number of push-ups from last month to this month?

14

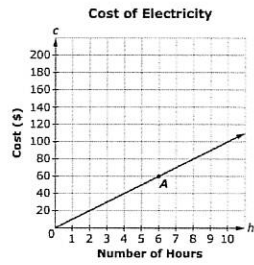
Enter the value of n so the expression $(-y + 5.3) + (7.2y - 9)$ is equivalent to $6.2y + n$.

←
→
↶
↷
✖

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

17

This graph shows a proportional relationship between the number of hours (h) a business operates and the total cost (c) of electricity.



Select True or False for each statement about the graph.

	True	False
Point A represents the total cost of electricity when operating the business for 6 hours.	<input type="checkbox"/>	<input type="checkbox"/>
The total cost of electricity is \$8 when operating the business for 80 hours.	<input type="checkbox"/>	<input type="checkbox"/>
The total cost of electricity is \$10 when operating the business for 1 hour.	<input type="checkbox"/>	<input type="checkbox"/>

18

Determine whether each statement is true for all cases, true for some cases, or not true for any case.

	True for all cases	True for some cases	Not true for any cases
Two vertical angles form a linear pair.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If two angles are supplementary and congruent, then they are right angles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The sum of two adjacent angles is 90° .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The measure of an exterior angle of a triangle is greater than every interior angle of the triangle.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

21



David uses $\frac{1}{2}$ cup of apple juice for every $\frac{1}{4}$ cup of cranberry juice to make a fruit drink.

Enter the number of cups of apple juice David uses for 1 cup of cranberry juice.

22



A store is having a sale. Each customer receives either a 15% discount on purchases under \$100 or a 20% discount on purchases of \$100 or more. Kelly is purchasing some clothes for \$96.60 before the discount. She decides to buy the fewest packs of gum that will increase her purchase to over \$100. The price of each pack of gum is \$0.79.

After the discount, how much less will Kelly pay by purchasing the clothes and the gum instead of purchasing only the clothes? (Assume there is no sales tax to consider.)

- Ⓐ \$1.05
- Ⓑ \$1.67
- Ⓒ \$3.69
- Ⓓ \$3.87

25



A scale factor of 3.5 maps Figure A onto Figure B.



Figure A

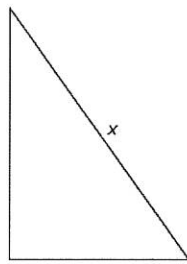


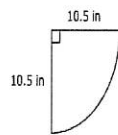
Figure B

Enter the value of x .

26



A corner shelf is $\frac{1}{4}$ of a circle and has a radius of 10.5 inches.



Enter the area of the shelf, in square inches. Round your answer to the nearest hundredth.

1 ☰

GUEST

A principal wants to know if students at a particular high school are in favor of a new dress code at their school. The principal is not able to ask the opinion of every student at the school, so she needs to select an appropriate sample of the students to represent the high school.

Select which sample of students the principal should choose.

- Ⓐ Students randomly selected from a list of all students at the school.
- Ⓑ Students sitting at randomly selected tables in the library.
- Ⓒ Students she selects from the hallway between classes.
- Ⓓ Students selected by the teachers.

2 ☰

GUEST

Enter the value of $5 \cdot (13.5 - 4.5)$.

← → ↶ ↷ ✕

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

5

GUEST

Select **all** expressions that are equivalent to $-3.75 + 2(-4x + 6.1) - 3.25x$.

- $7x - 2x + 8.1$
- $8.45 - 8x - 3.25x$
- $-1.75 - 7.25x + 6.1$
- $-11.25x + 12.2 - 3.75$

6

GUEST

Enter the decimal equivalent of $\frac{11}{8}$.

←	→	↶	↷	✕
1	2	3		
4	5	6		
7	8	9		
0	.	-		

9 ☰

GUEST

Jenny has \$25 and she earns \$10 for each lawn that she mows. Jenny wants to buy a concert ticket that costs \$65. Enter the minimum number of lawns Jenny needs to mow to be able to buy the concert ticket.

← → ↶ ↷ ✖

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

10 ☰

GUEST

This table shows a proportional relationship between the grams of peanuts and raisins in a bag of trail mix.

Grams of Peanuts	Grams of Raisins
14	4
21	6
35	10

Enter the number of grams of peanuts in a bag for every 1 gram of raisins.

← → ↶ ↷ ✖

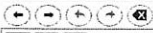
1	2	3
4	5	6
7	8	9
0	.	-

13

GUEST

Sara buys a sweater at a department store. The sweater costs \$30. The store is having a 25% off sale on everything in the store.

Enter the amount of money, in dollars, Sara saves from the sale. Do not consider the sales tax.



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

14

GUEST

An electrician is hired to install outdoor lighting. The electrician claims that the relationship between the number of hours worked and the total work fee is proportional. The fee for 5 hours of work is \$225.

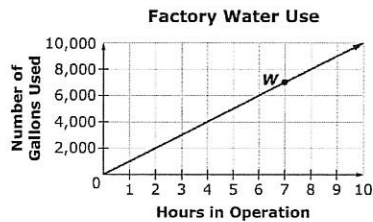
Select all combinations of values for the electrician's work hours and total work fee that support the claim that the relationship between the two values is proportional.

- 6 hours and \$270
- 6.5 hours and \$315
- 8 hours and \$360
- 8.75 hours and \$380
- 9.5 hours and \$427.50

17

GUEST

This graph shows a proportional relationship between the number of hours a factory is in operation and the number of gallons of water used.



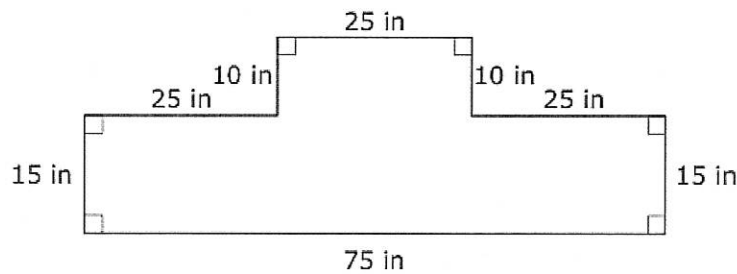
Select True or False for each statement about the graph.

	True	False
The factory uses 4 gallons of water when it is in operation for 4000 hours.	<input type="checkbox"/>	<input type="checkbox"/>
Point <i>W</i> represents the number of gallons of water used when the factory is in operation for 7 hours.	<input type="checkbox"/>	<input type="checkbox"/>
The factory uses 9000 gallons of water when it is in operation for 9 hours.	<input type="checkbox"/>	<input type="checkbox"/>

18

GUEST

The figure shown is created by joining two rectangles.



Enter the area, in square inches, of the figure.

21 ☰
GUEST

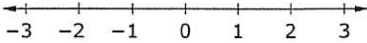
The circumference of a circle is approximately 37.7 centimeters.
Enter the radius of the circle, in centimeters. Round your answer to the nearest whole number.

← → ↶ ↷ ✖


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


22 ☰
GUEST


Drag the correct arrow onto the number line to represent the solution of the inequality $6x - 4 < 8$.




-3 -2 -1 0 1 2 3









25 ☰

GUEST

Lenny bought a motorcycle. He paid 12.5% in tax. The tax added \$1437.50 to the price of the motorcycle. What was the price of the motorcycle, not including the tax?

← → ↶ ↷ ✖

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

26 ☰

GUEST

These two maps show the same area at two different scales.

- Columbus is not on Map A.
- Map B does not have a scale written on it.
- Riverside and Gladville are 6.8 cm apart on Map A.
- Riverside and Gladville are 3.4 cm apart on Map B.
- Gladville and Columbus are 1.8 cm apart on Map B.

Map A

1 cm = 40 mi

Map B

Determine the straight line distance, in miles, from Gladville to Columbus.

29

GUEST

When playing basketball, Jan makes 4 out of every 10 shots she takes.

Select all the statements that describe Jan's situation.

- The ratio of the number of shots Jan makes to the number of shots she takes is 2:5.
- The ratio of the number of shots Jan makes to the number of shots she does not make is 2:3.
- The equation $4x = 10y$ shows the relationship between x , the number of shots Jan makes, and y , the number of shots she takes.
- The equation $6x = 4z$ shows the relationship between x , the number of shots Jan makes, and z , the number of shots she does not make.

30

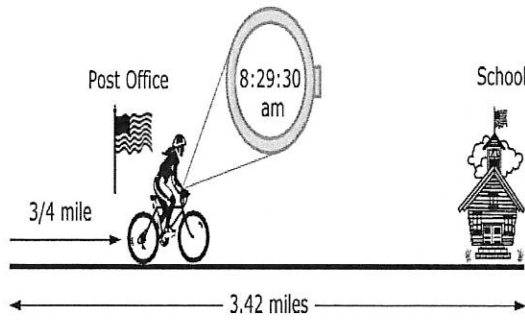
GUEST

Mary and Jerry are exercising on a track.

- Mary is walking at a rate of 3 miles per hour.
- Jerry starts jogging at a rate of 4 miles per hour after Mary has been walking for 15 minutes.
- Jerry jogs 2 miles as Mary continues walking, and they both stop at the same time.

Enter the **total** distance, in miles, that Mary walks around the track.

Emily leaves her house at exactly 8:25 a.m. to bike to her school, which is 3.42 miles away. When she passes the post office, which is $\frac{3}{4}$ mile away from her home, she looks at her watch and sees that it is 30 seconds past 8:29 a.m.



If Emily's school starts at 8:50 a.m., can Emily make it to school on time without increasing her rate of speed? Show and/or explain the work necessary to support your answer.