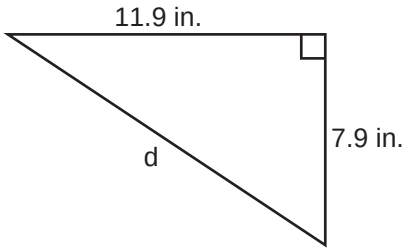
STAAR GRADE 8 MATHEMATICS REFERENCE MATERIALS

STAAR
State of Texas Assessments of Academic Readiness

2 The diagram shows a right triangle and the lengths of two of its sides in inches.



Which measurement is closest to the value of d in inches?

F 6.3 in.

G 4.0 in.

H 14.3 in.

J 19.8 in.

8 A rectangle is graphed on a coordinate grid. Which transformation will result in a rectangle that is NOT congruent to the original rectangle?

F A dilation by a scale factor of 3

G A rot ation of 180° counterclockwise

H A translation 90 units to the right

J A reflection across the x-axis

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9 There are a total of 463,100 books in a library. What is the value of the exponent when this number is written in scientific notation?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

10 Monica wants to open a savings account with a deposit of $3,000. Monica will not make any additional deposits or withdrawals after she opens the account. Her bank offers two different savings accounts.

- Account X pays 2.1% simple annual interest.
- Account Y pays 2.4% interest compounded annually.

Which statement about these accounts at the end of 5 years is true?

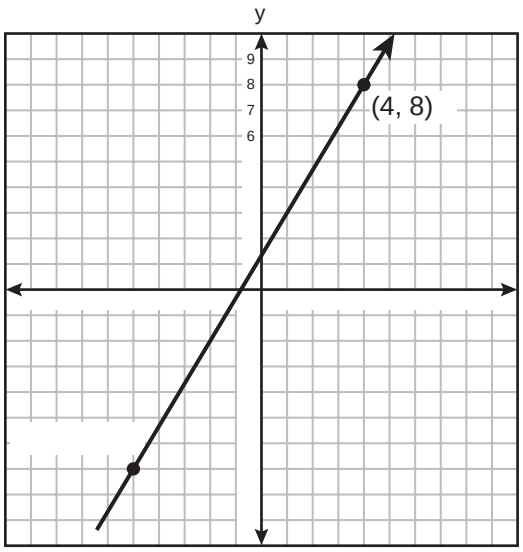
F Account X would earn Monica about $62.70 more interest than Account Y.

G Account Y would earn Monica about $62.70 more interest than Account X.

H Account X would earn Monica about $45.00 more interest than Account Y.

J Account Y would earn Monica about $45.00 more interest than Account X.

11 The graph of a linear function is shown on the coordinate grid.



15 Fulgurites are pieces of glass in the shape of a cylinder produced when lightning strikes sand. A student found a fulgurite with a height of 21 inches and a diameter of 6 inches.

Which equation can be used to find V, the volume of the fulgurite in cubic inches?

A $V = (6)^2(21)$

B $V = (3)^2(21)$

C $V = (6)(21)$

D $V = (3)(21)$

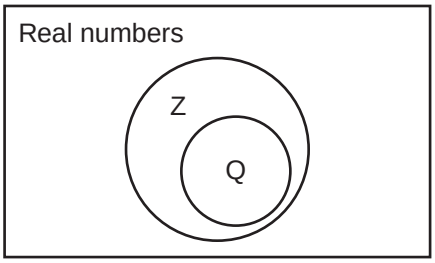
GO ON

21 Set Q and Set Z are subsets of the real number system.

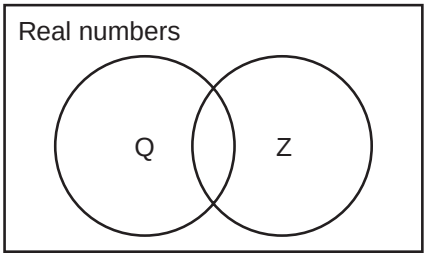
Q = {rational numbers}

Z = {integers}

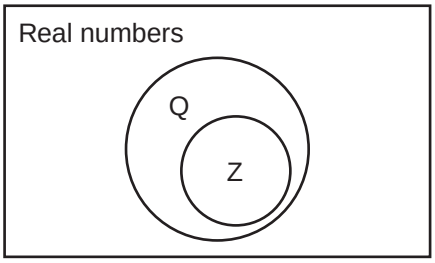
Which Venn diagram best represents the relationship between Set Q and Set Z?

A 

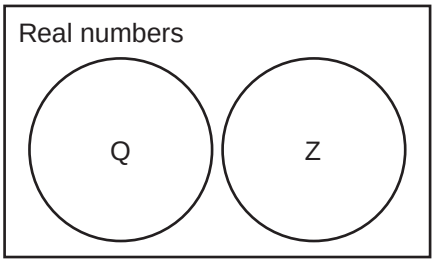
, because all rational numbers are integers

B 

, because some integers are not rational numbers

C 

, because all integers are rational numbers

D 

, because the rational numbers and the integers have no elements in common

GO ON

22 A teacher bought sets of books at a cost of $17.95 per set. The teacher also paid a one-time shipping fee of $22.

Which table shows the relationship between the total cost of the books and the number of sets of books the teacher bought?

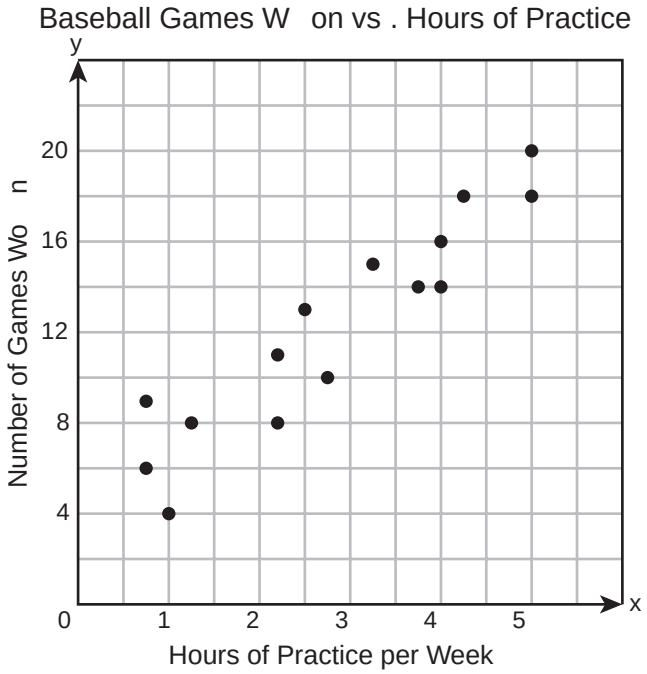
Cost of Books

Sets of Books	Total Cost (dollars)
16	369.95
20	457.95
24	545.95
28	633.95

Cost of Books

Sets of Books	Total Cost (dollars)
16	

24 The scatterplot shows the relationship between the number of games a baseball team won in a season and the number of hours the team practiced each week during the season.



Based on the scatterplot, which is the best prediction of the number of games a baseball team won if the team practiced 3 hours each week during the season?

F 10 games

G 20 games

H 13 games

J 15 games

25 Which measurements could represent the side lengths in feet of a right triangle?

A 10 ft, 24 ft, 26 ft

B

26 The table shows the coordinates of the vertices of pentagon ABCDE.

x	y
1	1
1	6
4	1
2	5
6	2

Pentagon ABCDE is dilated by a scale factor of $\frac{7}{3}$ with the origin as the center of dilation to create pentagon A B C D E . If (x, y) represents the location of any point on pentagon ABCDE, which ordered pair represents the location of the corresponding point on pentagon A B C D E ?

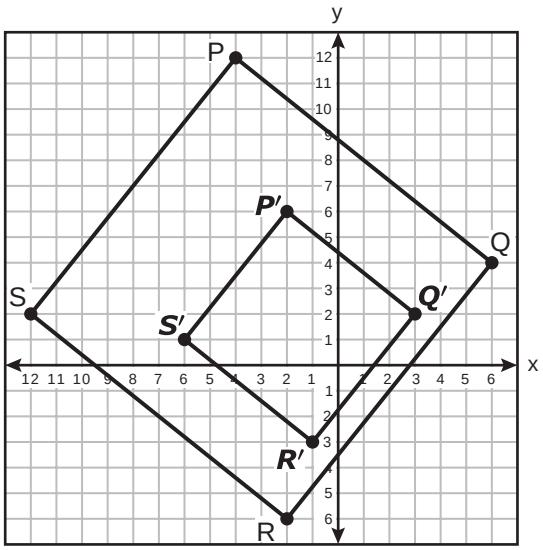
F $(\frac{3}{7}x, \frac{3}{7}y)$

G $(x + \frac{7}{3}, y + \frac{7}{3})$

H $(x + \frac{3}{7}, y + \frac{3}{7})$

J $(\frac{7}{3}x, \frac{7}{3}y)$

29 Quadrilateral PQRS is dilated with the origin as the center of dilation to create quadrilateral P Q R S . The coordinates of each vertex are integers.



30 The list shows the weight in pounds of 6 puppies at birth.

3, 1.6, 2.8, 2.5, 1.7, 2.8

What is the mean absolute deviation of these numbers?

F 0.5

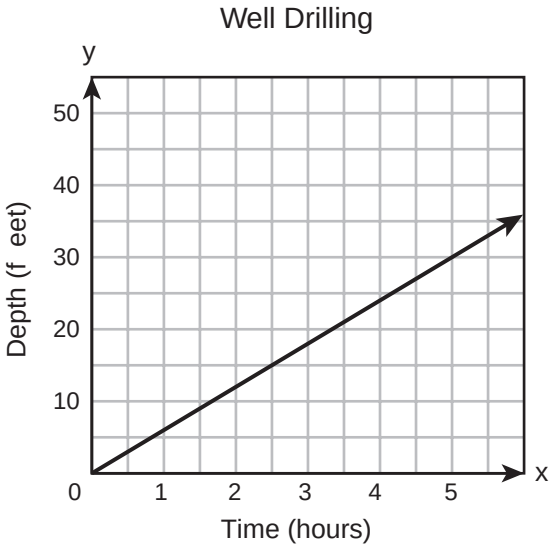
G 2.4

H 1.9

J 14.4

GO ON

31 A company is drilling a water well. The graph models the linear relationship between the depth of the well and the time spent drilling.



Which function best represents the relationship between y and x?

A $y = 6x$

B $y = 30x$

C $y = 5x + 30$

D $y = 6x + 30$

GO O

36 Which set of ordered pairs represents y as a function of x?

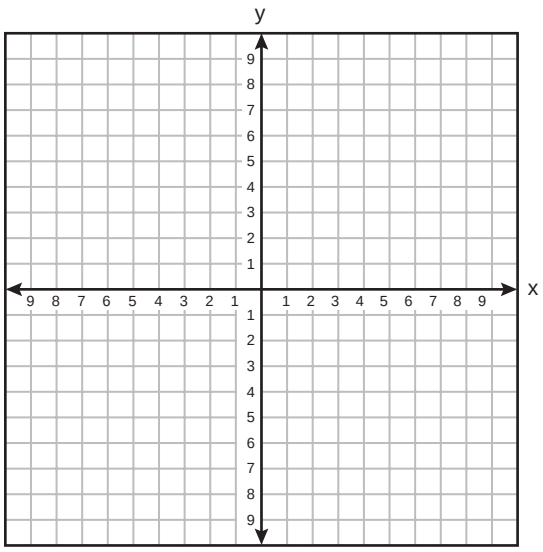
F $\{(4, \pm\sqrt{17}), (2, \pm\sqrt{6}), (1, \pm\sqrt{3}), (1, \pm\sqrt{10})\}$

G { (7, 2.9), (15, 5.9), (15, 8.9), (7, 11.9) }

H { (11.1, 7), (5.1, 4), (12.1, 5), (6.1, 7) }

J $\{(\pm\sqrt{1}, 3), (\pm\sqrt{2}, 4), (\pm\sqrt{1}, 5), (\pm\sqrt{6}, 7)\}$

37 The coordinates of the vertices of triangle XYZ are X(2, 1), Y(6, 8) and Z(8, 4). Triangle XYZ is dilated by a scale factor of $\frac{3}{2}$ with the origin as the center of dilation to create triangle X Y Z .



If (x, y) represents the location of any point on triangle XYZ, which ordered pair represents the location of the corresponding point on triangle X Y Z ?

A $(\frac{3}{2}x, \frac{3}{2}y)$

B $(x + \frac{3}{2}, y + \frac{3}{2})$

C $(\frac{2}{3}x, \frac{2}{3}y)$

D $(x + \frac{2}{3}, y + \frac{2}{3})$

GO ON

38 Larry put $1,287 into a savings account 8 years ago.

- The account earned 4% simple annual interest.
- He made no additional deposits or withdrawals.

Based on this information, what is the balance in dollars and cents in Larry's savings account at the end of these 8 years?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

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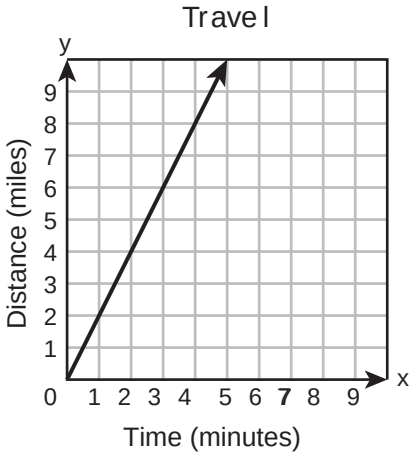
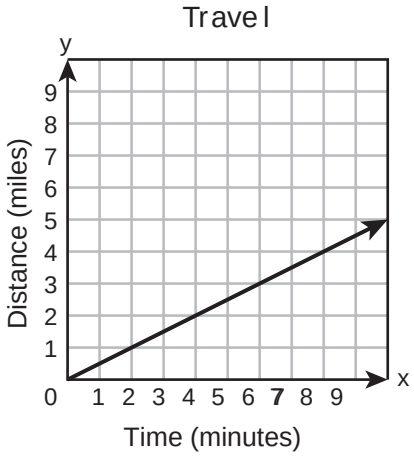
39 A student traveled a distance of 68 miles in 136 minutes. Which graph has a slope that best represents this rate?

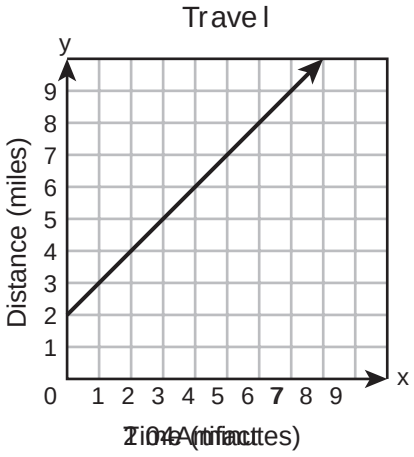
A



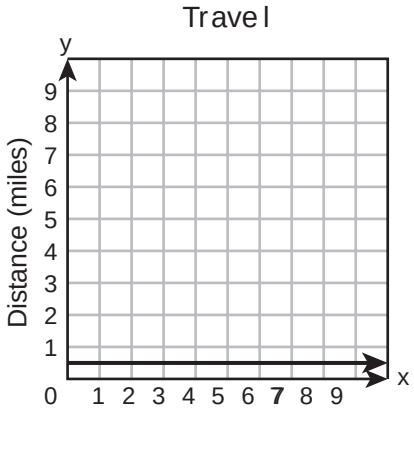
C



B



D



40 The cost for electricity varies directly with the amount of kilowatt-hours of electricity used. The cost for using 1,079 kilowatt-hours of electricity was $129.48.

What was the cost for using 908 kilowatt-hours of electricity?

F $41.52

G $153.86

H $75.67

J $108.96