# STAAR Items in A Box

**1**

STAAR 2018

**8.3C – 3 (R)** **thirteen X**

**29** A square with a perimeter of 20 units is graphed on a coordinate grid. The square is dilated by a scale factor of 0.4 with the origin as the center of dilation.

If $(x, y)$ represents the location of any point on the original square, which ordered pair represents the coordinates of the corresponding point on the resulting square?

**A** $(20x, 20y)$

**B** $(0.4x, 0.4y)$

**C** $(x + 20, y + 20)$

**D** $(x + 0.4, y + 0.4)$

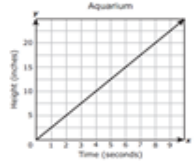
**2**

STAAR 2016

**8.4B – 2 (R)** **fourteen Z**

**5** An aquarium is being filled with water. The graph shows the height of the water over time as the aquarium is being filled.

Aquarium




Which statement best describes the rate of change for this situation?

**A** The height of the water increases 20 inches per second.

**B** The height of the water increases 1 inch per second.

**C** The height of the water increases 5 inches per second.

**3**

STAAR 2018

**8.3C – 3 (R)** **thirteen X**

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STAAR 2016

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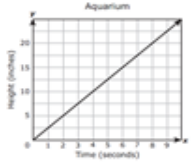


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**2**

**3**

STAAR 2018

**8.3C – 3 (R)** **thirteen X**

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# STAAR Items in A Box

STAAR 2018

8.3C – 3 (R) thirteen X

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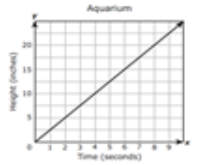
**D** $(x + 0.4, y + 0.4)$

**1**

STAAR 2016

8.4B – 2 (R) fourteen Z

5 An aquarium is being filled with water. The graph shows the height of the water over time as the aquarium is being filled.

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**2**

STAAR 2018

8.3C – 3 (R) thirteen X

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If $(x, y)$ represents the location of any point on the original square, which ordered pair represents the coordinates of the corresponding point on the resulting square?

**A** $(20x, 20y)$

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**C** $(x + 20, y + 20)$

**D** $(x + 0.4, y + 0.4)$

**3**

## Targeted Student Support for Maximizing Results

### 8th STAAR Math Student Profile

Student Name: _____ Period: _____

| Cate. | TEKS | R or S | Student Expectation | Basic | Basic | Interm | Interm | Interm | Adv. | Adv. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.2A | S | Extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers | | | | | | | |
| 1 | 8.2B | S | Approximate the value of an irrational number, including π and square roots of numbers less than 225, and locate that rational number approximation on a number line | | | | | | | |
| 1 | 8.2C | S | Convert between standard decimal notation and scientific notation | | | | | | | |
| 1 | 8.2D | R | Order a set of real numbers arising from mathematical and real-world contexts | | | | | | | |
| 2 | 8.4A | S | Use similar right triangles to develop an understanding that slope, $m$, given as the rate comparing the change in $y$-values to the change in $x$-values, $(y_2 - y_1)/(x_2 - x_1)$, is the same for any two points $(x_1, y_1)$ and $(x_2, y_2)$ on the same line | | | | | | | |
| 2 | 8.4B | R | Graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship | | | | | | | |
| 2 | 8.4C | R | Use data from a table or graph to determine the rate of change or slope and $y$-intercept in mathematical and real-world problems | | | | | | | |
| 2 | 8.5A | S | Represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$ | | | | | | | |
| 2 | 8.5B | S | Represent linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$, where $b \neq 0$ | | | | | | | |
| 2 | 8.5E | S | Solve problems involving direct variation | | | | | | | |
| 2 | 8.5F | S | Distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$, where $b \neq 0$ | | | | | | | |

| Cate. | TEKS | R or S | Student Expectation | Basic | Basic | Interm | Interm | Interm | Adv. | Adv. |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 8.5G | R | Identify functions using sets of ordered pairs, tables, mappings, and graphs | | | | | | | |
| 2 | 8.5H | S | Identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems | | | | | | | |
| 2 | 8.5I | R | Write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations | | | | | | | |
| 2 | 8.8A | S | Write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants | | | | | | | |
| 2 | 8.8B | S | Write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants | | | | | | | |
| 2 | 8.8C | R | Model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants | | | | | | | |
| 2 | 8.9A | S | Identify and verify the values of $x$ and $y$ that simultaneously satisfy two linear equations in the form $y = mx + b$ from the intersections of the graphed equations | | | | | | | |
| 3 | 8.3A | S | Generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation | | | | | | | |
| 3 | 8.3B | S | Compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane | | | | | | | |
| 3 | 8.3C | R | Use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation | | | | | | | |
| 3 | 8.6A | S | Describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height | | | | | | | |
| 3 | 8.6C | S | Use models and diagrams to explain the Pythagorean theorem | | | | | | | |
| 3 | 8.7A | R | Solve problems involving the volume of cylinders, cones, and spheres | | | | | | | |

| Cate. | TEKS | R or S | Student Expectation | Basic | Basic | Interm | Interm | Interm | Adv. | Adv. |
|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 8.7B | R | Use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders | | | | | | | |
| 3 | 8.7C | R | Use the Pythagorean Theorem and its converse to solve problems | | | | | | | |
| 3 | 8.7D | S | Determine the distance between two points on a coordinate plane using the Pythagorean Theorem | | | | | | | |
| 3 | 8.8D | S | Use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles | | | | | | | |
| 3 | 8.10A | S | Generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane | | | | | | | |
| 3 | 8.10B | S | Differentiate between transformations that preserve congruence and those that do not | | | | | | | |
| 3 | 8.10C | R | Explain the effect of translations, reflections over the $x$- or $y$-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation | | | | | | | |
| 3 | 8.10D | S | Model the effect on linear and area measurements of dilated two-dimensional shapes | | | | | | | |
| 4 | 8.5C | S | Contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation | | | | | | | |
| 4 | 8.5D | R | Use a trend line that approximates the linear relationship between bivariate sets of data to make predictions | | | | | | | |
| 4 | 8.11A | S | Construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data | | | | | | | |
| 4 | 8.11B | S | Determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points | | | | | | | |

| Cate. | TEKS | R or S | Student Expectation | Basic | Basic | Interm | Interm | Interm | Adv. | Adv. |
|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 8.12A | S | Solve real-world problems comparing how interest rate and loan length affect the cost of credit | | | | | | | |
| 4 | 8.12C | S | Explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time | | | | | | | |
| 4 | 8.12D | R | Calculate and compare simple interest and compound interest earnings | | | | | | | |
| 4 | 8.12G | S | Estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college | | | | | | | |
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STAAR State of Texas Assessments of Academic Readiness 2016

**8.2D – 1 (R)** **one Y**

**1** Four students are each trying to raise the same amount of money for a class trip. The table below shows how much of each student's goal has been met.

Fund-Raiser Progress

| Student | Part of Goal Met |
|---|---|
| Chelsea | 0.7 |
| Devon | $\frac{2}{3}$ |
| Huang | $\frac{5}{8}$ |
| Marcela | 65% |

Which list shows the numbers in the table in order from least to greatest?

**A** 0.7, 65%, $\frac{5}{8}$, $\frac{2}{3}$

**B** 0.7, $\frac{5}{8}$, 65%, $\frac{2}{3}$

**C** $\frac{5}{8}$, 65%, $\frac{2}{3}$, 0.7

**D** $\frac{5}{8}$, $\frac{2}{3}$, 65%, 0.7

DL: 2

STAAR State of Texas Assessments of Academic Readiness 2016

**8.2D – 1 (R)** **two Z**

**30** Three groups of students used different methods to estimate the diagonal length of a patio in feet. Their results were:

- $4\sqrt{13}$ ft
- $14\frac{2}{5}$ ft
- 14.33 ft

Which list shows these diagonal lengths in order from greatest to least?

**F** $14.33, 14\frac{2}{5}, 4\sqrt{13}$

**G** $14.33, 4\sqrt{13}, 14\frac{2}{5}$

**H** $14\frac{2}{5}, 14.33, 4\sqrt{13}$

**J** $4\sqrt{13}, 14\frac{2}{5}, 14.33$

DL: 2

STAAR State of Texas Assessments of Academic Readiness 2016

**8.2D – 1 (R)** **three Y**

**37** Which list shows the numbers below in order from least to greatest?

$$5.78,\ -5.9,\ 58\%,\ -\frac{23}{4}$$

**A** $-5.9,\ -\frac{23}{4},\ 5.78,\ 58\%$

**B** $-\frac{23}{4},\ -5.9,\ 58\%,\ 5.78$

**C** $-5.9,\ -\frac{23}{4},\ 58\%,\ 5.78$

**D** $58\%,\ -\frac{23}{4},\ 5.78,\ -5.9$

DL: 2

STAAR State of Texas Assessments of Academic Readiness 2017

**8.2D – 1 (R)** **four Y**

**3** Two numbers are shown on the number line.


Which value is NOT located between these two numbers on the number line?

**A** $\pi$

**B** $\sqrt{9}$

**C** $\frac{\pi}{9}$

**D** $\frac{\pi^2}{9}$

DL: 2

STAAR State of Texas Assessments of Academic Readiness **2017**

**8.2D – 1 (R)** **five Z**

**29** An inequality is shown.

$$\frac{1}{8} < x < 18\%$$

Which value of $x$ makes the inequality true?

**A** $\frac{1}{5}$

**B** 1.6

**C** 0.09

**D** $\sqrt{0.02}$

DL: 2.2

STAAR 2018

**8.2D – 1 (R)** **six X**

**3** Four plumbers estimated the length of the radius of a cylindrical pipe. The estimates made by the plumbers are listed.

- Plumber W estimated that the radius had a length of $\frac{3}{25}$ inches.
- Plumber X estimated that the radius had a length of $\frac{\sqrt{3}}{11}$ inches.
- Plumber Y estimated that the radius had a length of $\frac{9}{100}$ inches.
- Plumber Z estimated that the radius had a length of $\frac{\pi}{24}$ inches.

Which list shows these lengths in order from greatest to least?

**A** $\frac{9}{100}, \frac{\pi}{24}, \frac{3}{25}, \frac{\sqrt{3}}{11}$

**B** $\frac{\sqrt{3}}{11}, \frac{\pi}{24}, \frac{3}{25}, \frac{9}{100}$

**C** $\frac{9}{100}, \frac{3}{25}, \frac{\pi}{24}, \frac{\sqrt{3}}{11}$

**D** $\frac{\sqrt{3}}{11}, \frac{3}{25}, \frac{\pi}{24}, \frac{9}{100}$

DL: 2

STAAR 2018

**8.2D – 1 (R)** **seven Y**

**22** Which list shows these numbers in order from least to greatest?

$$\frac{37}{6},\quad -5.\overline{17},\quad \sqrt{33},\quad -\frac{26}{5}$$

**F** $-\frac{26}{5},\quad -5.\overline{17},\quad \frac{37}{6},\quad \sqrt{33}$

**G** $-5.\overline{17},\quad -\frac{26}{5},\quad \frac{37}{6},\quad \sqrt{33}$

**H** $-\frac{26}{5},\quad -5.\overline{17},\quad \sqrt{33},\quad \frac{37}{6}$

**J** $-5.\overline{17},\quad -\frac{26}{5},\quad \sqrt{33},\quad \frac{37}{6}$

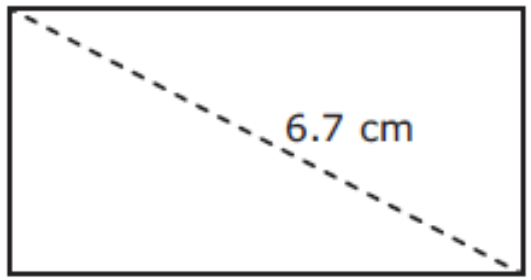
DL: 2

STAAR 2019

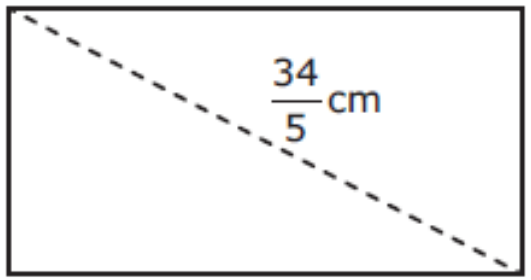
**8.2D – 1 (R)** **fifty five X**

**27** The diagonal lengths of three rectangles are shown. The rectangles are not drawn to scale.

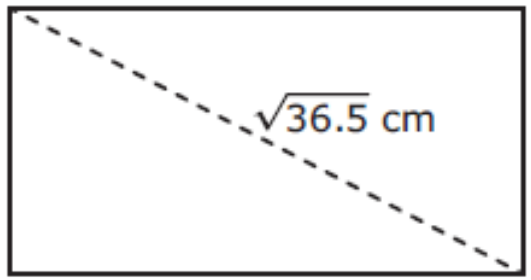
Rectangle P




Rectangle S




Rectangle T




Which list shows the rectangles in order by their diagonal lengths from shortest to longest?

**A** Rectangle T, Rectangle S, Rectangle P

**B** Rectangle T, Rectangle P, Rectangle S

**C** Rectangle S, Rectangle T, Rectangle P

**D** Rectangle S, Rectangle P, Rectangle T

DL: 2.4

STAAR 2019

**8.2D – 1 (R)** **sixteen Y**

17 The table shows the completion times of four runners in a race.

Race Times

| Runner | Time (seconds) |
|---|---|
| Joe | $12\frac{1}{2}$ |
| Ellen | 12.09 |
| Steve | $12\frac{2}{5}$ |
| Patty | 12.8 |

Which list shows the runners in order by their completion times from fastest to slowest?

**A** Patty, Joe, Steve, Ellen

**B** Ellen, Joe, Steve, Patty

**C** Ellen, Steve, Joe, Patty

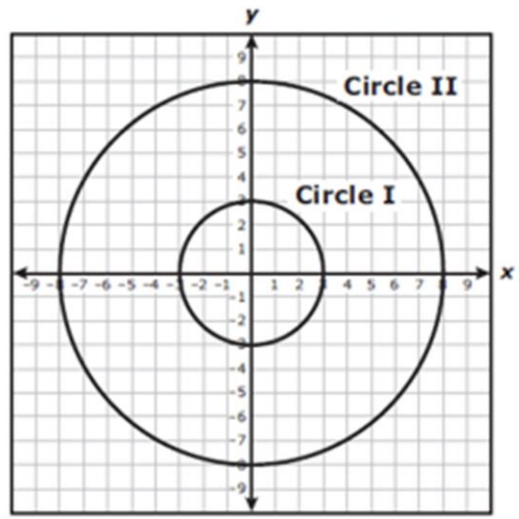
**D** Patty, Steve, Joe, Ellen

DL: 2.2

STAAR State of Texas Assessments of Academic Readiness 2016

**8.3C – 3 (R)** **eight X**

**26** Circle I was dilated with the origin as the center of dilation to create Circle II.




Which rule best represents the dilation applied to Circle I to create Circle II?

**F** $(x, y) \rightarrow (\frac{3}{8}x, \frac{3}{8}y)$

**G** $(x, y) \rightarrow (\frac{8}{3}x, \frac{8}{3}y)$

**H** $(x, y) \rightarrow (x + 5, y + 5)$

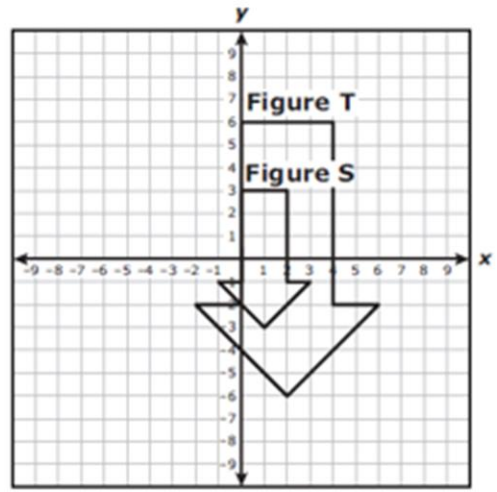
**J** $(x, y) \rightarrow (x - 5, y - 5)$

DL: 1.8

STAAR State of Texas Assessments of Academic Readiness 2016

**8.3C – 3 (R)** **nine W**

**51** Figure S, the small arrow, was dilated with the origin as the center of dilation to create Figure T, the large arrow.




Which rule best represents the dilation that was applied to Figure S to create Figure T?

**A** $(x, y) \rightarrow (2x, 2y)$

**B** $(x, y) \rightarrow (4x, 4y)$

**C** $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

**D** $(x, y) \rightarrow (\frac{1}{4}x, \frac{1}{4}y)$

DL: 2.7

STAAR 2017

**8.3C – 3 (R)** **ten Z**

**5** Triangle *MNP* is graphed on a coordinate grid with vertices at *M* (–3, –6), *N* (0, 3) and *P* (6, –3). Triangle *MNP* is dilated by a scale factor of *u* with the origin as the center of dilation to create triangle *M′N′P′*.

Which ordered pair represents the coordinates of the vertex *P′*?

**A** $(6 + u, -3 + u)$

**B** $(\frac{6}{u}, -\frac{3}{u})$

**C** $(6 + \frac{1}{u}, -3 + \frac{1}{u})$

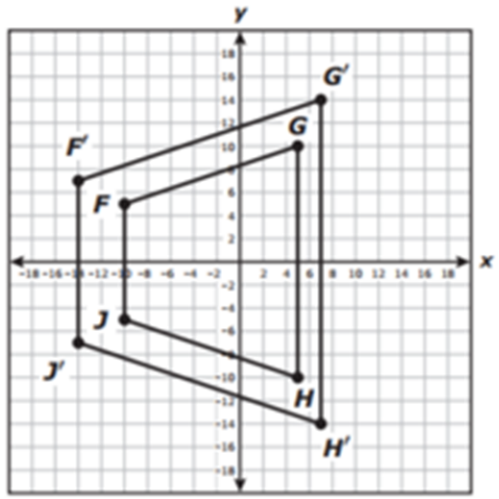
**D** $(6u, -3u)$

DL: 2.5

STAAR 2017

**8.3C – 3 (R)** **eleven Y**

**36** **Quadrilateral *FGHJ* was dilated with the origin as the center of dilation to create quadrilateral *F′G′H′J′*.**




**Which rule best represents the dilation that was applied to quadrilateral *FGHJ* to create quadrilateral *F′G′H′J′*?**

**F** $(x, y) \rightarrow (\frac{5}{7}x, \frac{5}{7}y)$

**G** $(x, y) \rightarrow (x + 1, y + 2)$

**H** $(x, y) \rightarrow (1.4x, 1.4y)$

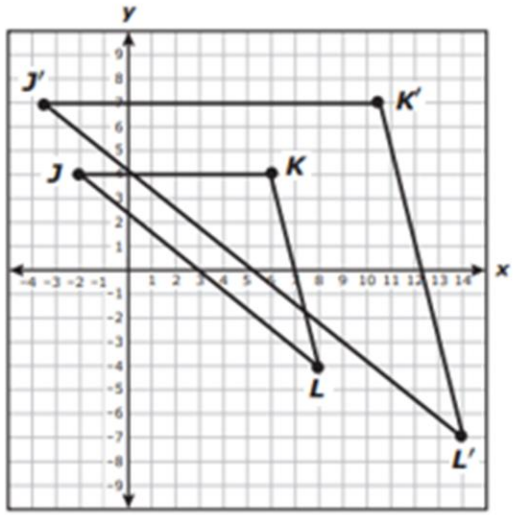
**J** $(x, y) \rightarrow (x - 2, y + 1)$

DL: 1.8

STAAR 2018

**8.3C – 3 (R)** **twelve Z**

**17** Triangle *JKL* is dilated with the origin as the center of dilation to create triangle *J′K′L′*.




Which rule best represents the dilation that has been applied to triangle *JKL* to create triangle *J′K′L′*?

**A** $(x, y) \rightarrow (x + 6, y - 3)$

**B** $(x, y) \rightarrow (x + 4.5, y + 3)$

**C** $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

**D** $(x, y) \rightarrow (\frac{7}{4}x, \frac{7}{4}y)$

DL: 2

STAAR 2018

**8.3C – 3 (R)** **thirteen X**

**29** A square with a perimeter of 20 units is graphed on a coordinate grid. The square is dilated by a scale factor of 0.4 with the origin as the center of dilation.

If $(x, y)$ represents the location of any point on the original square, which ordered pair represents the coordinates of the corresponding point on the resulting square?

**A** $(20x, 20y)$

**B** $(0.4x, 0.4y)$

**C** $(x + 20, y + 20)$

**D** $(x + 0.4, y + 0.4)$

DL: 1.5

STAAR State of Texas Assessments of Academic Readiness 2019

**8.3C – 3 (R)** **forty five Z**

**24** A polygon is graphed on a coordinate grid with $(x, y)$ representing the location of a certain point on the polygon. The polygon is transformed using the rule $(x, y) \rightarrow (ax, ay)$.

Which statement must be true?

**F** If $a$ is greater than 1, the image of the polygon is congruent to the polygon.

**G** If $a$ is between 0 and 1, the image of the polygon is congruent to the polygon.

**H** If $a$ is greater than 1, the image of the polygon is smaller than the polygon.

**J** If $a$ is between 0 and 1, the image of the polygon is smaller than the polygon.

DL: 3

STAAR State of Texas Assessments of Academic Readiness 2019

**8.3C – 3 (R)** **Thirty Z**

6 A polygon will be dilated on a coordinate grid to create a smaller polygon. The polygon is dilated using the origin as the center of dilation.

Which rule could represent this dilation?

**F** $(x, y) \rightarrow (0.5 - x, 0.5 - y)$

**G** $(x, y) \rightarrow (x - 7, y - 7)$

**H** $(x, y) \rightarrow (\frac{5}{4}x, \frac{5}{4}y)$

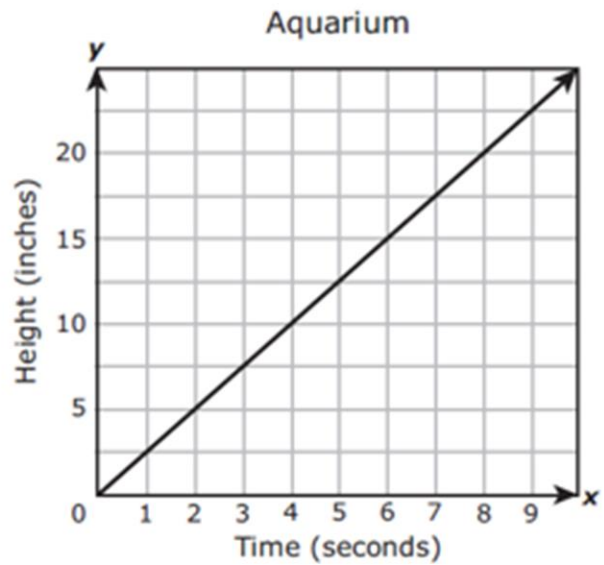
**J** $(x, y) \rightarrow (0.9x, 0.9y)$

DL: 2.3

STAAR 2016

**8.4B – 2 (R)** **fourteen Z**

**5** An aquarium is being filled with water. The graph shows the height of the water over time as the aquarium is being filled.




Which statement best describes the rate of change for this situation?

**A** The height of the water increases 20 inches per second.

**B** The height of the water increases 1 inch per second.

**C** The height of the water increases 5 inches per second.

**D** The height of the water increases 2.5 inches per second.

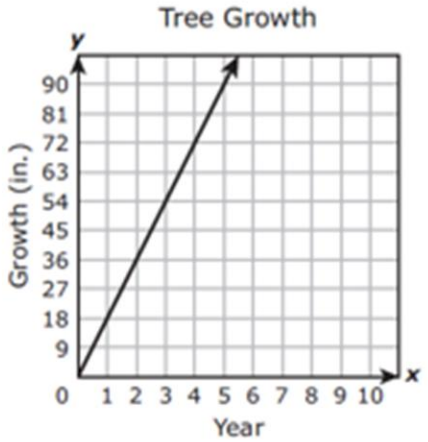
DL: 1.5

STAAR State of Texas Assessments of Academic Readiness 2016

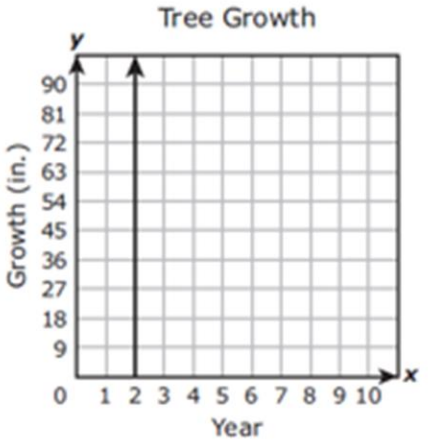
**8.4B – 2 (R)** **fifteen X**

**34** A tree in Dante's neighborhood grew 18 inches in the first 2 years after it was planted. If the tree continues to grow at this same rate, which graph best represents the growth rate of the tree in inches per year?

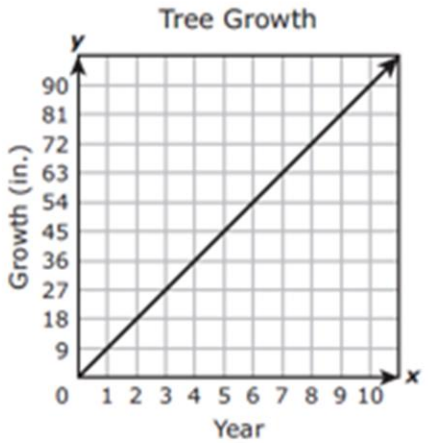
**F**



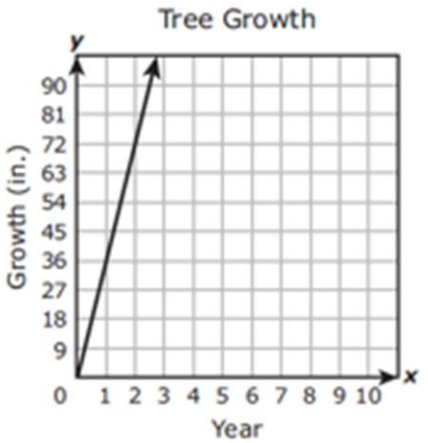

**H**




**G**




**J**



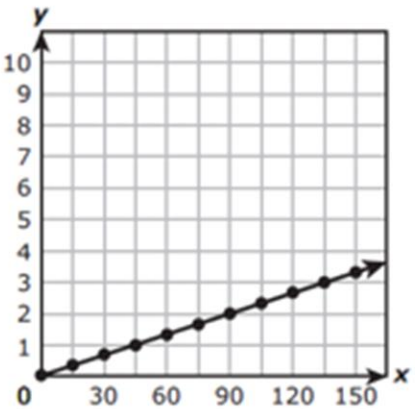

DL: 1.5

STAAR State of Texas Assessments of Academic Readiness 2016

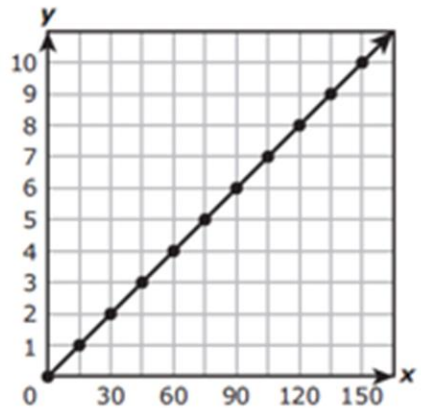
**8.4B – 2 (R)** **sixteen Y**

**42** On a field trip, there are 3 adults for every 45 students. Which graph models a relationship with the same unit rate?

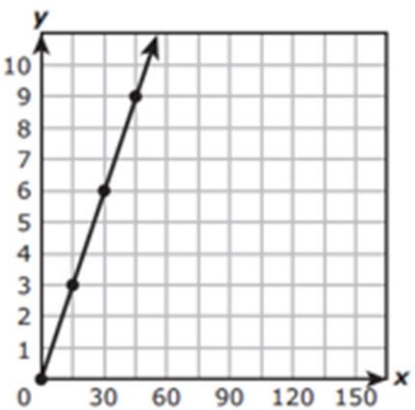
**F**



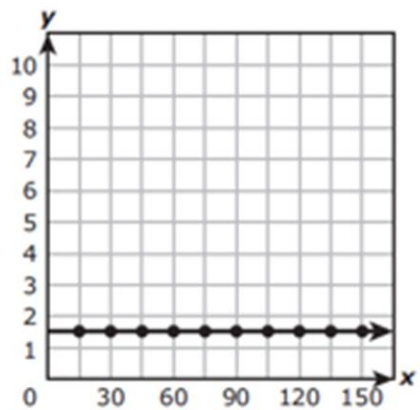

**H**




**G**




**J**



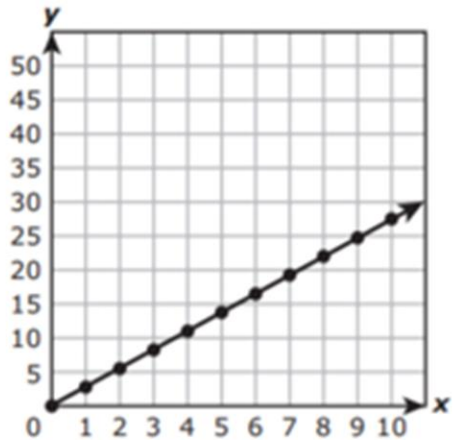

DL: 2

STAAR State of Texas Assessments of Academic Readiness **2017**

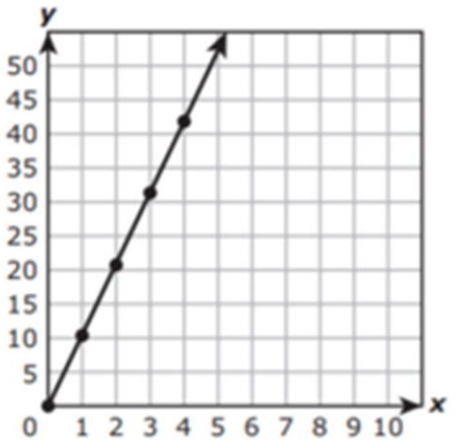
**8.4B – 2 (R)** **eighteen W**

**28** Leanor pays a total of $16.50 for every 6 shirts she has dry-cleaned. Which graph models a relationship with the same unit rate?

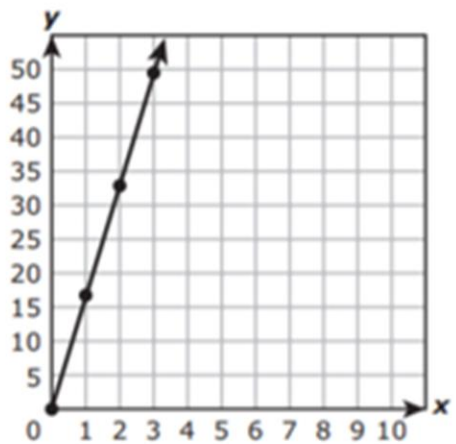
**F**



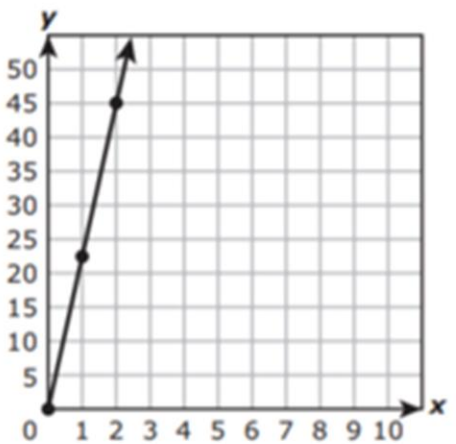

**H**




**G**




**J**



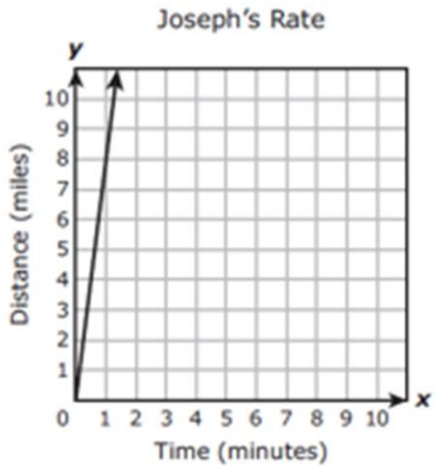

DL: 1

STAAR 2018

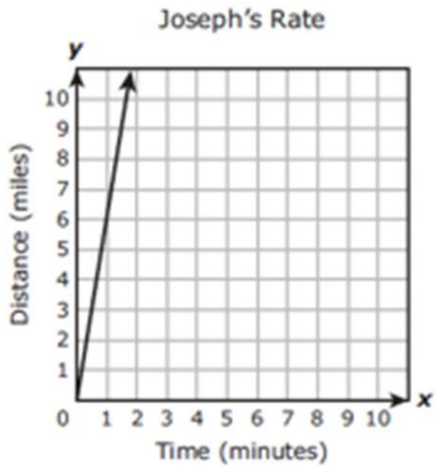
**8.4B – 2 (R)** **nineteen X**

**20** Joseph ran a 6-mile race in 48 minutes. Which graph has a slope that best represents Joseph's average rate of speed during the race?

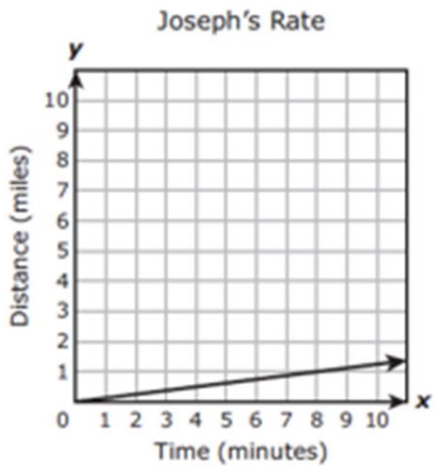
**F**



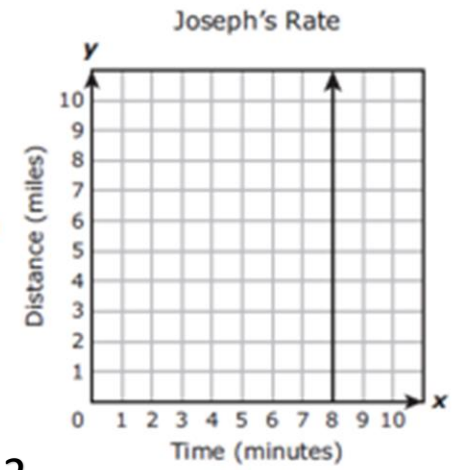

**H**




**G**




**J**



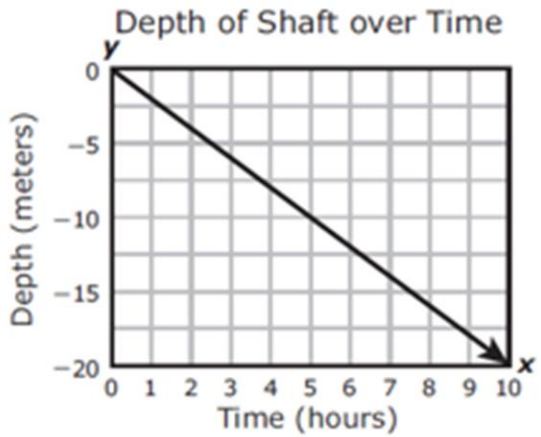

DL: 2

STAAR 2018

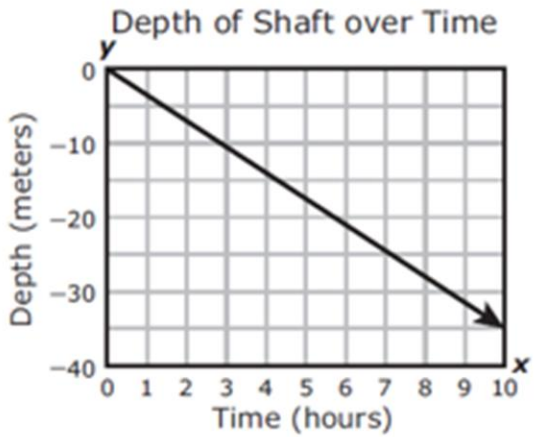
**8.4B – 2 (R)** **twenty Y**

**42** An oil-well contractor drills a shaft 7 meters deeper into the ground every 2 hours. Which graph has a slope that best represents this rate?

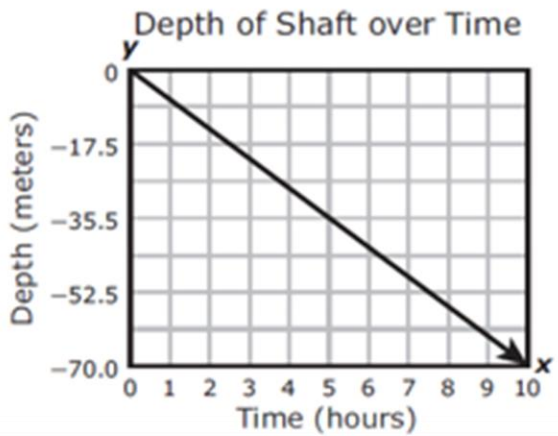
**F**



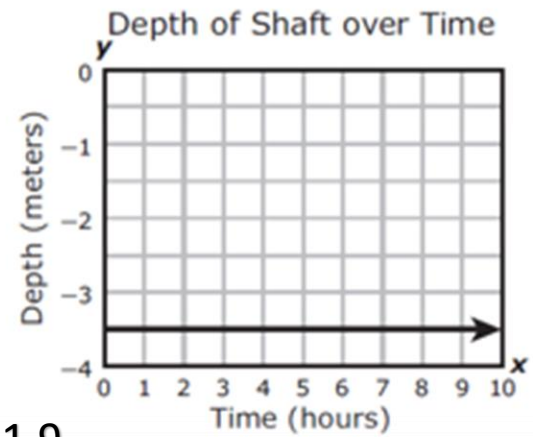

**H**




**G**




**J**



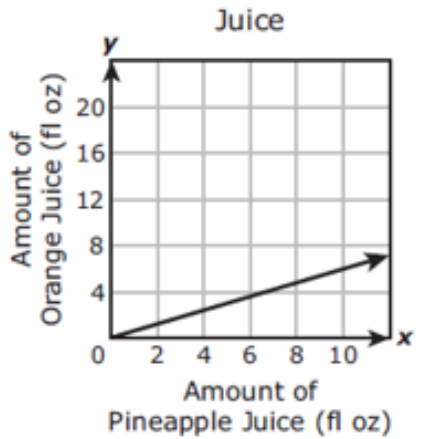

DL: 1.9

STAAR 2019

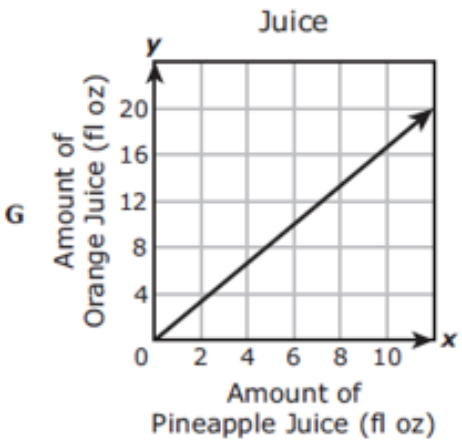
**8.4B – 2 (R)** **forty X**

**20** A bottle contains 30 fluid ounces of orange juice and 18 fluid ounces of pineapple juice. Which graph has a slope that best represents the ratio of orange juice to pineapple juice in this bottle?

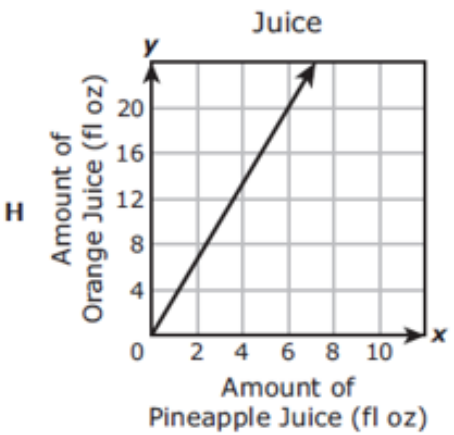
F



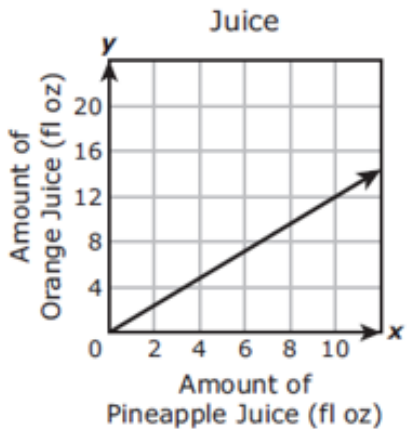

G




H




J




DL: 2.4

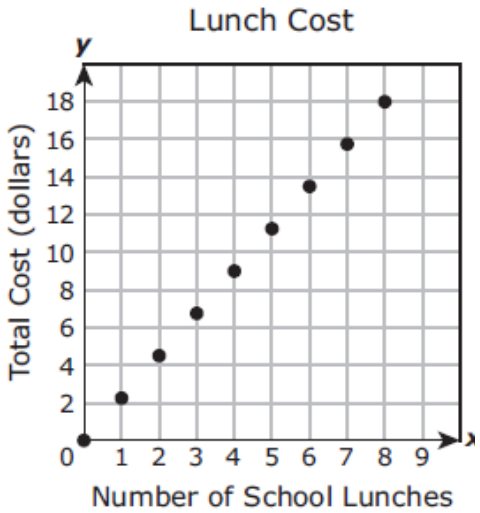
STAAR 2019

**8.4B – 2 (R)** **forty one W**

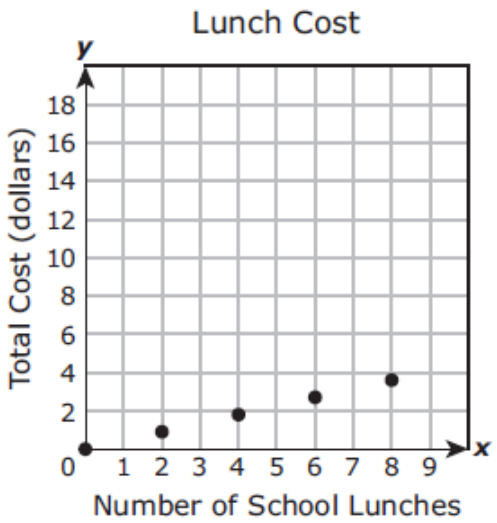
**1** Oscar buys his lunch in the school cafeteria. The cost of 15 school lunches is $33.75.

Which graph has a slope that best represents the average cost of the lunches in dollars per lunch?

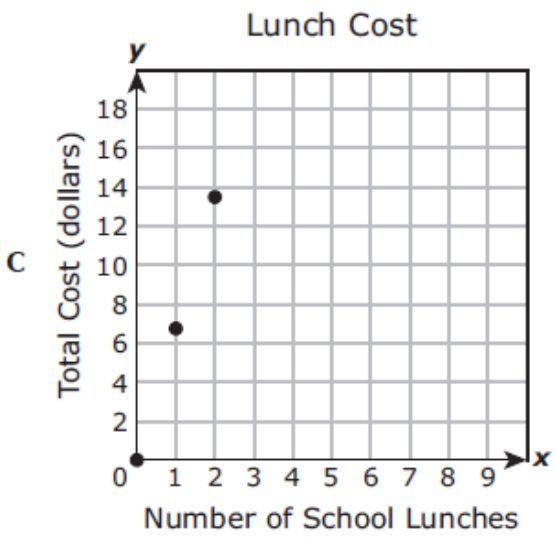
**A**



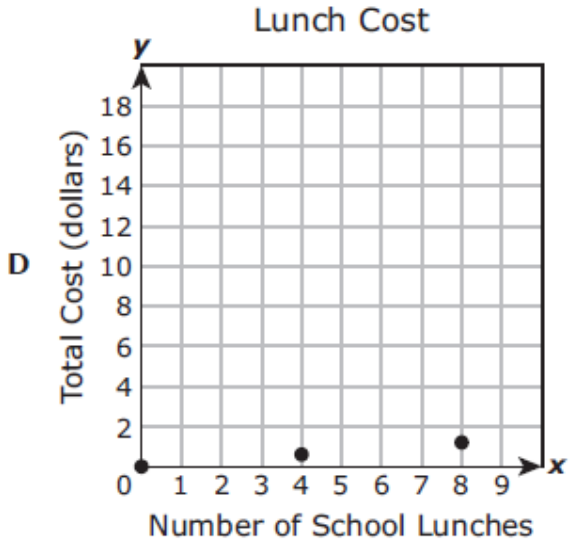

**B**




**C**




**D**

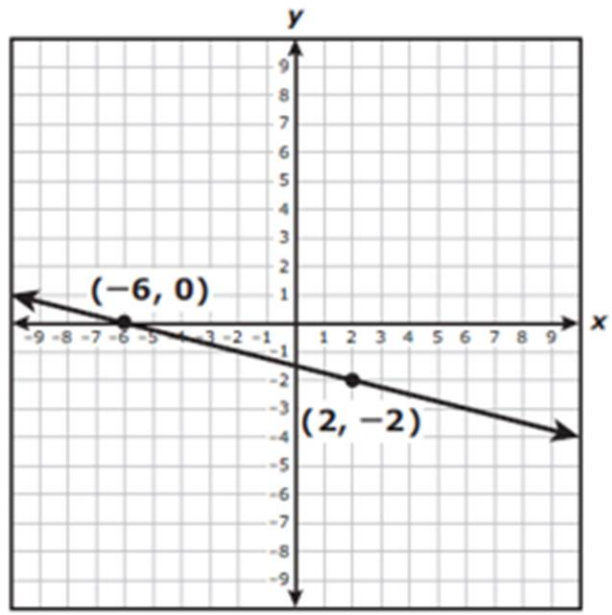



DL: 2.5

STAAR State of Texas Assessments of Academic Readiness 2016

**8.4C – 2 (R)** **twenty one Y**

**12** What are the slope and the *y*-intercept of the graph of the linear function shown on the grid?




**F** Slope = 4, *y*-intercept = –6

**G** Slope = –4, *y*-intercept = –1.5

**H** Slope = $-\frac{1}{4}$, *y*-intercept = –1.5

**J** Slope = $\frac{1}{4}$, *y*-intercept = –6

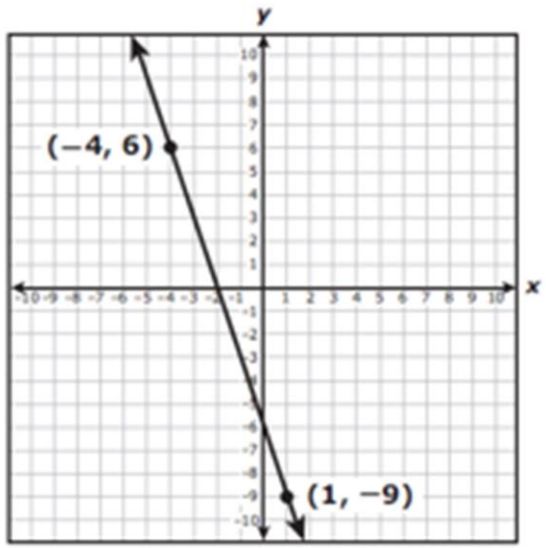
DL: 2

STAAR State of Texas Assessments of Academic Readiness **2016**

## 8.4C – 2 (R)

**twenty two -6**

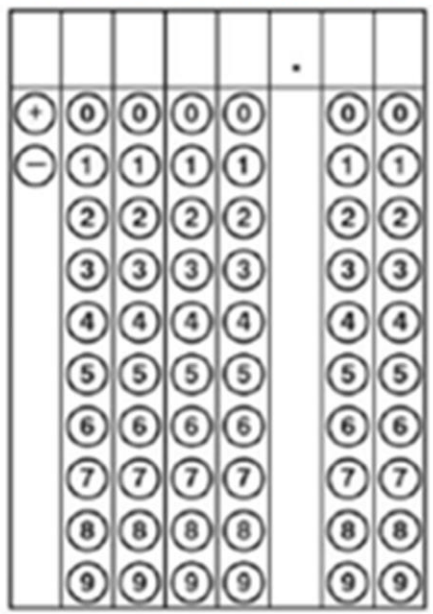
**39** The graph of a linear function is shown on the coordinate grid.




What is the *y*-intercept of the graph of the linear function?

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

Grades 6–8 Mathematics




DL: 1

STAAR 2016

**8.4C – 2 (R)** **twenty three W**

**47** Carolyn will buy the same number of stamps every month to add to a stamp collection her grandfather gave her. The table shows the number of stamps Carolyn will have at the end of $x$ months.

Carolyn's Stamp Collection

| Number of Months, $x$ | 1 | 3 | 6 | 10 |
|---|---|---|---|---|
| Number of Stamps, $y$ | 250 | 350 | 500 | 700 |

How many stamps was Carolyn given, and how many stamps will she buy every month?

**A** Carolyn was given 200 stamps, and she will buy 50 stamps every month.

**B** Carolyn was given 180 stamps, and she will buy 70 stamps every month.

**C** Carolyn was given 180 stamps, and she will buy 50 stamps every month.

**D** Carolyn was given 200 stamps, and she will buy 70 stamps every month.

DL: 2.2

STAAR 2017

**8.4C – 2 (R)** **twenty four X**

**6** The table shows the number of gallons of gasoline in a car's gas tank after the car has been driven $x$ miles.

Gasoline Usage

| Miles Driven, $x$ | Gallons of Gasoline in Tank, $y$ |
|---|---|
| 0 | 15 |
| 10 | 14.6 |
| 20 | 14.2 |
| 35 | 13.6 |
| 60 | 12.6 |
| 75 | 12 |

When these data are graphed on a coordinate grid, the points all lie on the same line. What are the slope and $y$-intercept of this line?

**F** Slope = $\frac{1}{25}$, $y$-intercept = 375

**G** Slope = $-\frac{1}{25}$, $y$-intercept = 15

**H** Slope = 25, $y$-intercept = 375

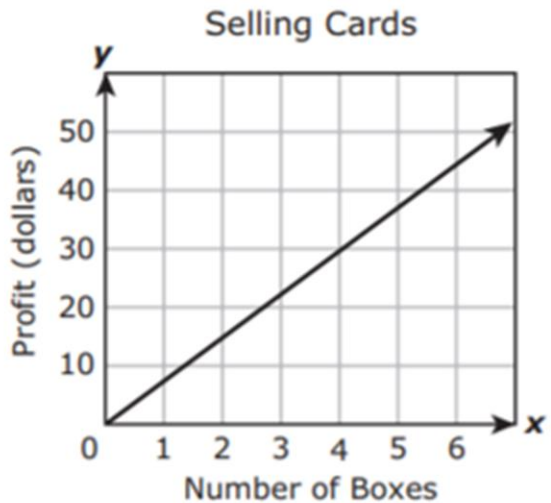
**J** Slope = –25, $y$-intercept = 15

DL: 2

STAAR 2017

**8.4C – 2 (R)** **twenty five W**

**39** Emily sells greeting cards. The graph models the linear relationship between the number of boxes of cards she sells and her profit.




Which of these best describes the profit Emily makes from selling these cards?

**A** $7.50 per box

**B** $10.00 per box

**C** $4.00 per 30 boxes

**D** $3.00 per 4 boxes

DL: 1.9

STAAR 2018

**8.4C – 2 (R)** **twenty six W**

**18** A gym charges a membership fee plus an additional fee per yoga class. The table shows the linear relationship between the number of yoga classes taken and the total cost including the membership fee.

Yoga Classes

| Number of Yoga Classes | Total Cost |
|---|---|
| 6 | $67.50 |
| 8 | $75.00 |
| 10 | $82.50 |
| 14 | $97.50 |
| 20 | $120.00 |

Which statement is true?

**F** The additional fee per yoga class is $3.75.

**G** The additional fee per yoga class is $8.25.

**H** The membership fee is $35.00.

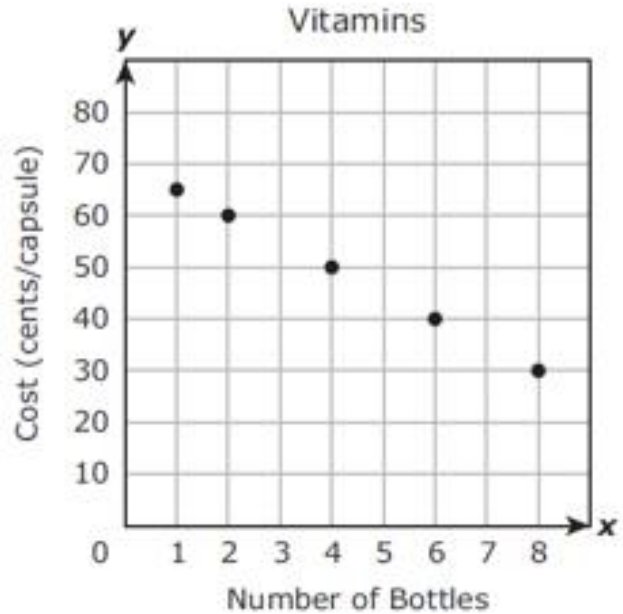
**J** The membership fee is $42.50.

DL: 3

STAAR 2018

**8.4C – 2 (R)** **twenty seven -5**

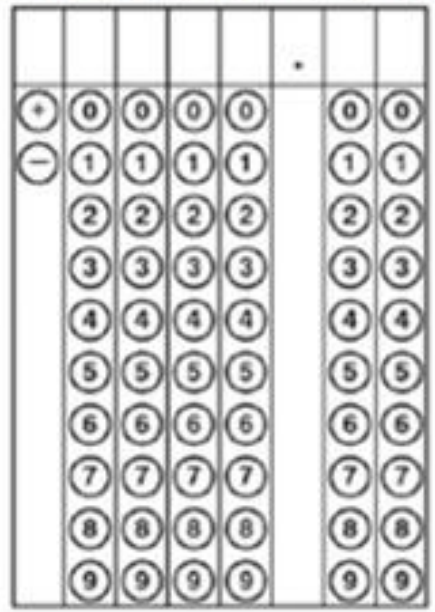
**38** A company sells bottles of vitamin capsules. The graph and table show the linear relationship between the cost per capsule in cents and the number of bottles ordered.




Vitamins

| Number of Bottles, $x$ | Cost, $y$ (cents/capsule) |
|---|---|
| 1 | 65 |
| 2 | 60 |
| 4 | 50 |
| 6 | 40 |
| 8 | 30 |

Grades 6–8 Mathematics



What is the slope of the line that models this situation?

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

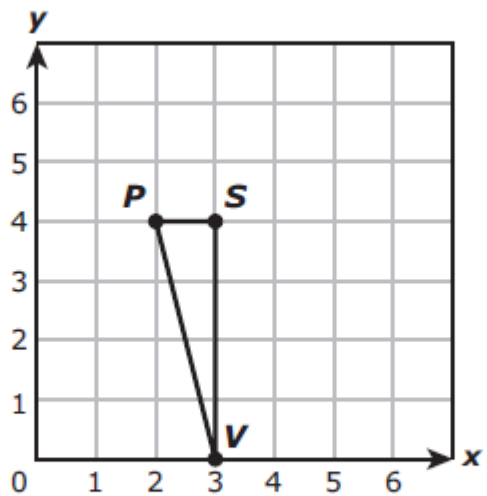
DL: 2.2

STAAR 2019

**8.4C – 2 (R)**

**sixty -4**

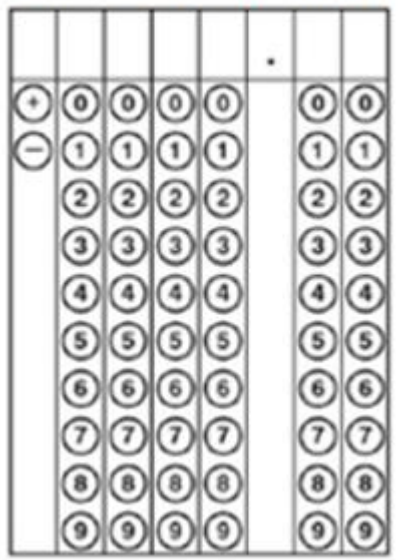
9 Triangle *PSV* is shown on the coordinate grid. The coordinates of each vertex of the triangle are integers.




What is the slope of $\overline{PV}$?

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

Grades 6–8 Mathematics



DL: 2.7

STAAR 2019

**8.4C – 2 (R)** **nineteen X**

35 The table shows the linear relationship between the number of hours Francis worked, $x$, and the amount of money Francis earned, $y$.

Francis's Earnings

| Number of Hours Worked | 1.25 | 3.75 | 5.5 |
|---|---|---|---|
| Amount Earned | $17.50 | $52.50 | $77.00 |

Based on the table, how much did Francis earn per hour?

**A** $17.50 per hour

**B** $14.00 per hour

**C** $35.00 per hour

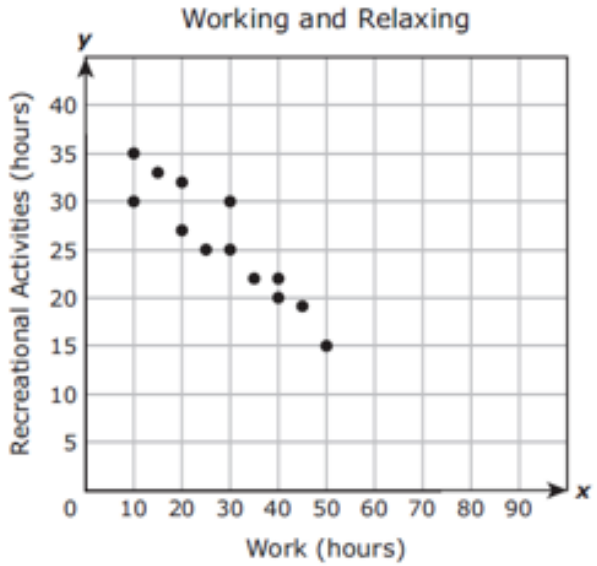
**D** $24.50 per hour

DL: 1.8

STAAR 2016

**8.5D – 4 (R)** **twenty eight Z**

**23** The scatterplot shows the average number of hours each of 13 people spends at work every week and the average number of hours each of them spends on recreational activities every week.




Based on the scatterplot, what is the best prediction of the average number of hours a person spends at work every week if that person spends an average of 10 hours on recreational activities every week?

**A** 33 h

**B** 85 h

**C** 50 h

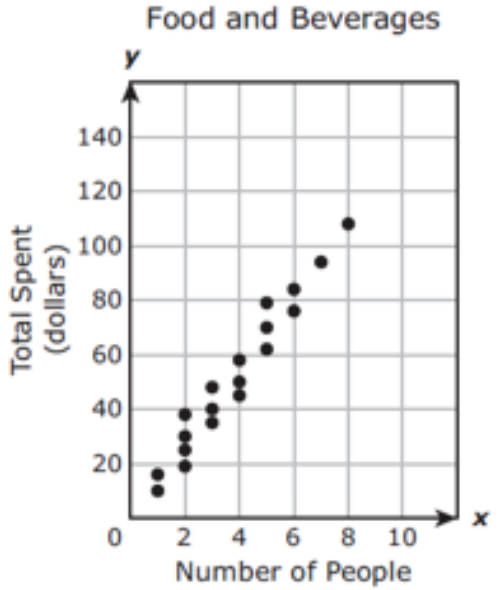
**D** 65 h

DL: 1.5

STAAR 2016

**8.5D – 4 (R)** **twenty nine W**

**27** The manager of a restaurant recorded how many people were in different groups of customers and how much those groups spent on food and beverages. The scatterplot below shows the data she recorded.




Based on this scatterplot, about how much money would a group of 10 people be expected to spend on food and beverages at this restaurant?

**A** $135

**B** $115

**C** $105

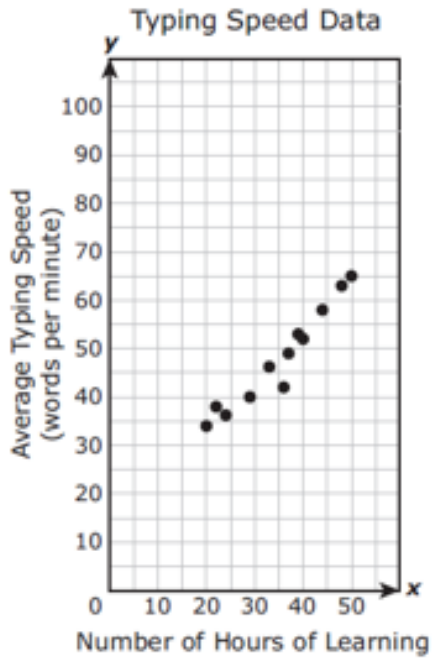
**D** $150

DL: 1.7

STAAR 2016

**8.5D – 4 (R)** **thirty Y**

**46** The scatterplot shows the number of hours that 12 people spent learning to type on a keyboard and each person's average typing speed.




Based on the scatterplot, what is the best prediction of a person's average typing speed in words per minute (wpm) if the person has spent 70 hours learning to type?

**F** 100 wpm

**G** 55 wpm

**H** 85 wpm

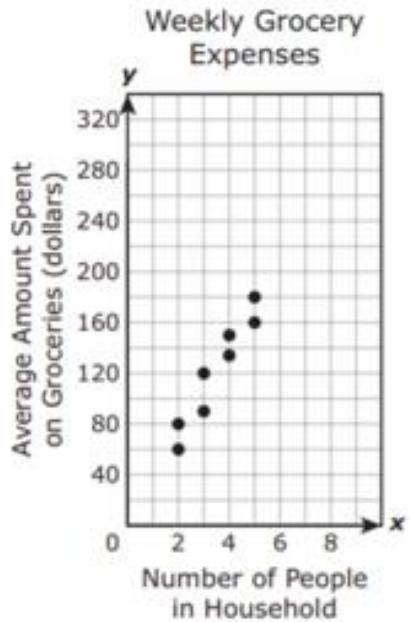
**J** 70 wpm

DL: 2.2

STAAR 2017

**8.5D – 4 (R)** **thirty one W**

**10** The scatterplot shows the number of people in each of 8 different households and the average amount of money each household spent on groceries.




Based on the scatterplot, what is the best prediction of the average amount of money spent on groceries for a household that has 7 people?

**F** $240

**G** $190

**H** $210

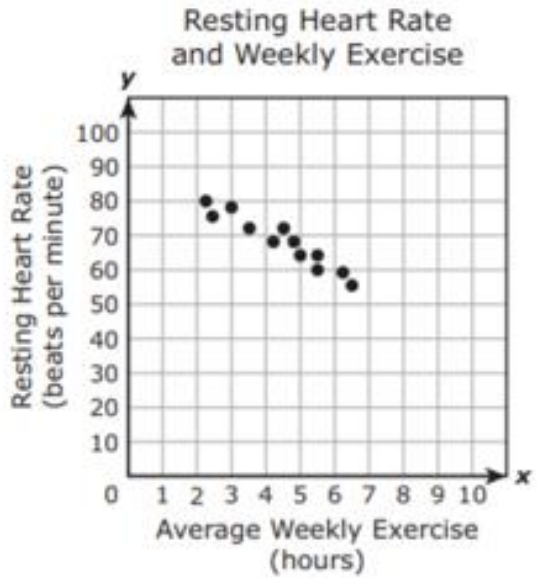
**J** $300

DL: 1.3

STAAR 2017

**8.5D – 4 (R)** **thirty two X**

**32** Ben collected data from a group of 12 people. He measured each person's resting heart rate and recorded the average number of hours each person exercised per week. He created a scatterplot to show the data he collected.




Based on the scatterplot, what is the best prediction of the resting heart rate, in beats per minute, of a person who exercises an average of 8 hours each week?

**F** 30 beats per minute

**G** 50 beats per minute

**H** 55 beats per minute

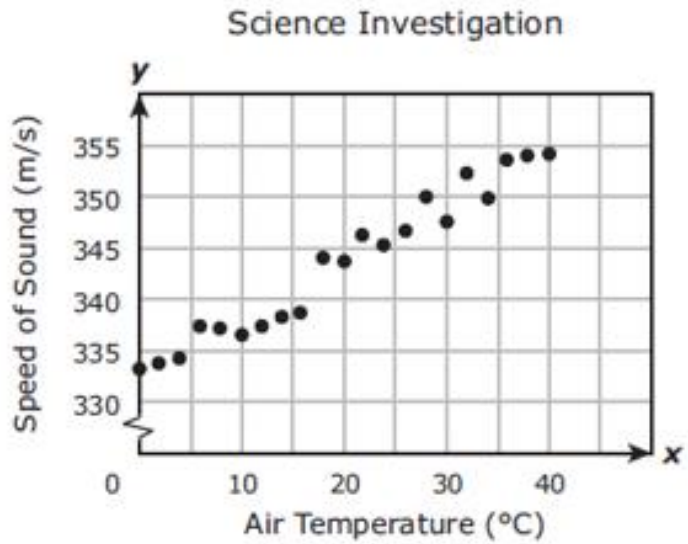
**J** 60 beats per minute

DL: 1.2

STAAR 2018

**8.5D – 4 (R)** **thirty three Y**

2 Students in a science class investigated how the speed of sound changes with the air temperature outside. The data are shown in the scatterplot.




Based on the scatterplot, what is the best prediction of the speed of sound when the air temperature is 50°C?

F 350 m/s

G 355 m/s

H 360 m/s

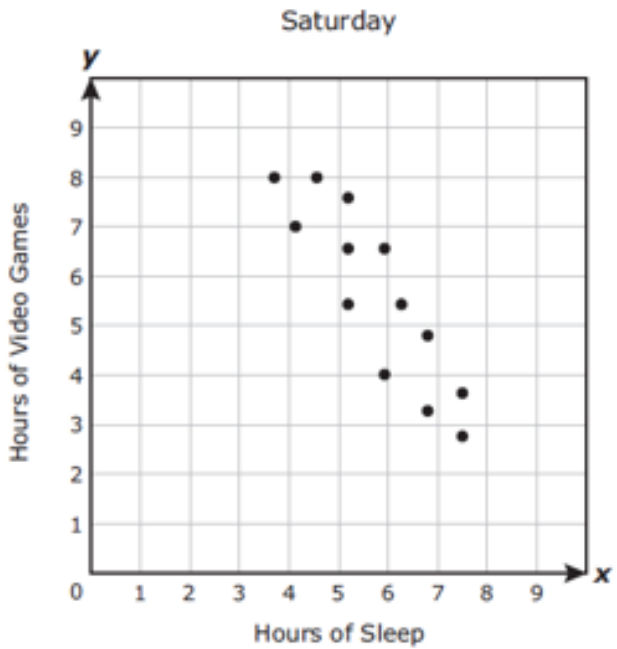
J 365 m/s

DL: 1.4

STAAR 2018

**8.5D – 4 (R)** **thrity four W**

32 Phil collected data from several of his friends about the number of hours they spent sleeping and the number of hours they spent playing video games on Saturday. He recorded the data in the scatterplot.




Based on the scatterplot, what is the best prediction of the number of hours one of Phil's friends spends sleeping when the friend spends 1 hour playing video games?

F 9 hours

G 8 hours

H 10 hours

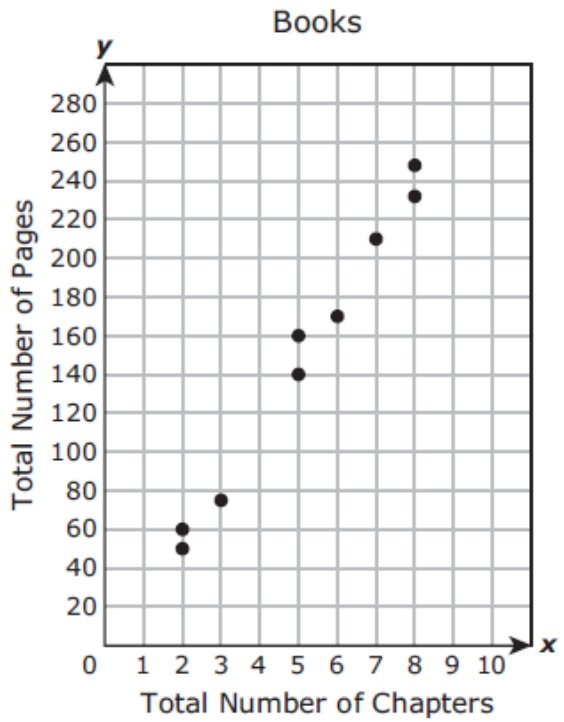
J 7 hours

DL: 1.2

STAAR 2019

**8.5D – 4 (R)** **seventeen Z**

**21** Students recorded the total number of pages and chapters in each of several books on the scatterplot.




Based on the scatterplot, which is the best prediction of the total number of pages in a book with 4 chapters?

**A** 150 pages

**B** 140 pages

**C** 90 pages

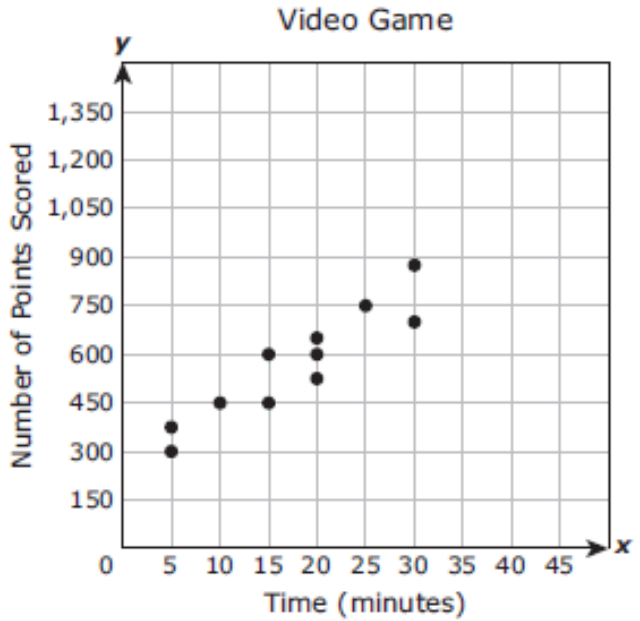
**D** 120 pages

DL: 1.8

STAAR 2019

**8.5D – 4 (R)** **fifty two Y**

**37** The scatterplot shows the time spent playing a video game and the number of points scored by several students.




Based on the scatterplot, which is the best prediction of the number of points scored by a student who spends 45 minutes playing the video game?

**A** 1,200

**B** 920

**C** 1,060

**D** 1,300

DL: 1.8

STAAR 2016



**25** Which set of ordered pairs represents $y$ as a function of $x$?

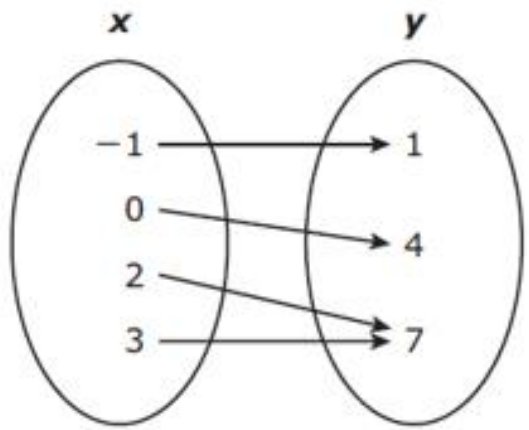
**A** $\{(2, -1), (4, -2), (6, -3), (8, -4)\}$

**B** $\{(0, 0), (1, 1), (1, 0), (2, 1)\}$

**C** $\{(3, 3), (3, 4), (4, 3), (4, 4)\}$

**D** $\{(1, -5), (1, 5), (2, -10), (2, -15)\}$

**28** Which statement describes the mapping?




**F** The mapping represents $y$ as a function of $x$, because each $y$-value corresponds to exactly one $x$-value.

**G** The mapping does not represent $y$ as a function of $x$, because two of the $x$-values correspond to the same $y$-value.

**H** The mapping represents $y$ as a function of $x$, because each $x$-value corresponds to exactly one $y$-value.

**J** The mapping does not represent $y$ as a function of $x$, because there are more $x$-values than different corresponding $y$-values.

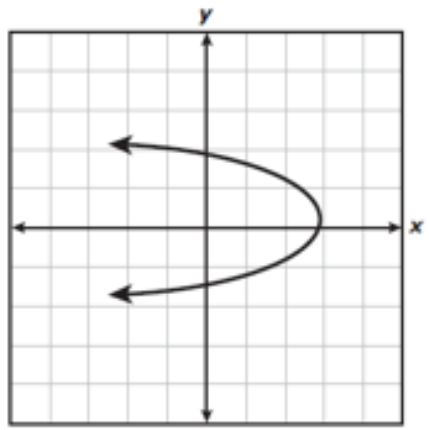
DL: 2.3

STAAR State of Texas Assessments of Academic Readiness 2016

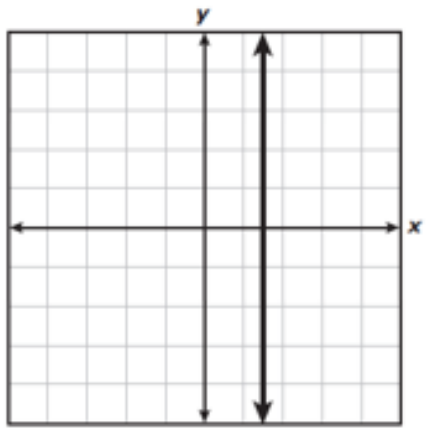
**8.5G – 2 (R)** **thirty seven X**

**56** Which graph represents $y$ as a function of $x$?

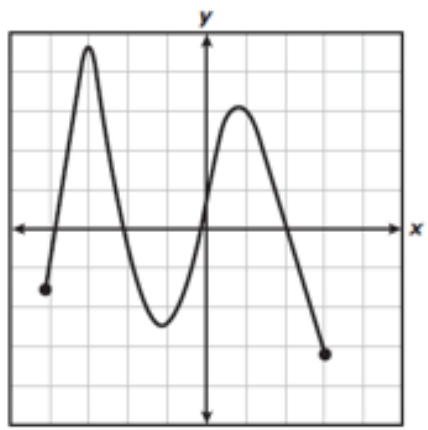
F



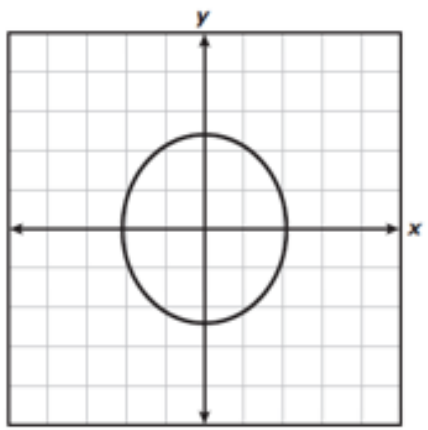

H




G




J



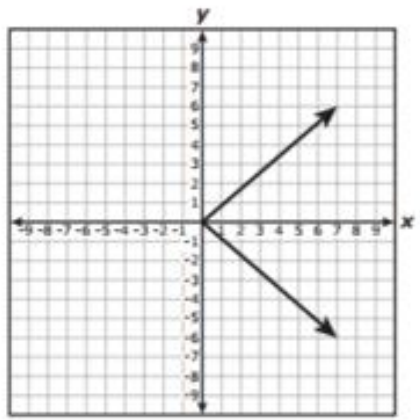

DL: 1

STAAR 2017

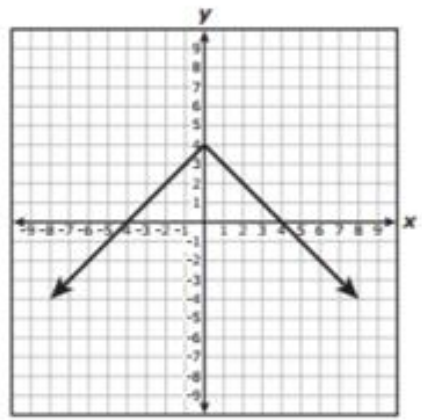
**8.5G – 2 (R)** **thirty eight W**

**11** Which graph does NOT represent $y$ as a function of $x$?

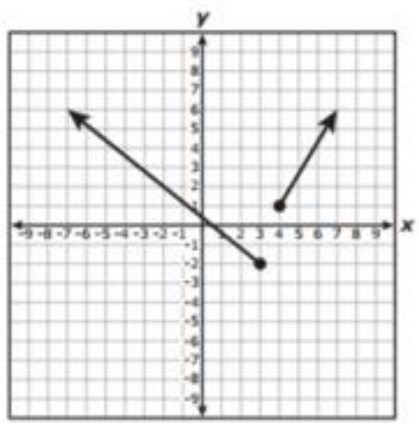
A



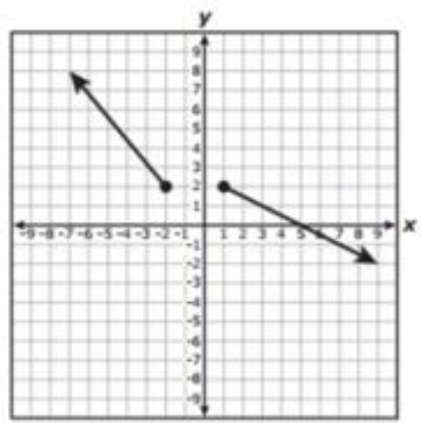

C




B




D




DL: 1

STAAR 2017

**8.5G – 2 (R)** **thirty nine X**

**25** Which set of ordered pairs represents $y$ as a function of $x$?

**A** $\{(2, 5), (3, 1), (2, 1), (4, 7)\}$

**B** $\{(3, 2), (4, 3), (5, 2), (2, 6)\}$

**C** $\{(1, 3), (3, 5), (2, 5), (1, 6)\}$

**D** $\{(4, 7), (4, 6), (4, 4), (4, 1)\}$

DL: 1

STAAR 2018

**8.5G – 2 (R)** **forty Z**

6 A relation contains the points (1, 2), (2, −1), (3, 0), (4, 1), and (5, −1). Which statement accurately describes this relation?

**F** The relation does not represent $y$ as a function of $x$, because each value of $x$ is associated with a single value of $y$.

**G** The relation represents $y$ as a function of $x$, because one value of $y$ is associated with two values of $x$.

**H** The relation does not represent $y$ as a function of $x$, because each value of $y$ is associated with two values of $x$.

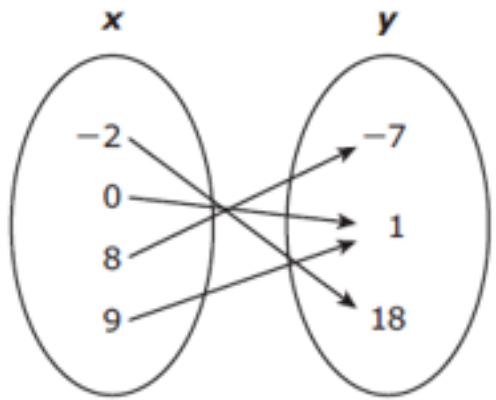
**J** The relation represents $y$ as a function of $x$, because each value of $x$ is associated with a single value of $y$.

**2018**

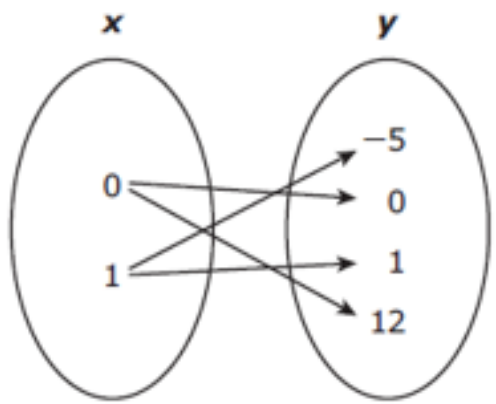
**8.5G – 2 (R)** **foty one W**

35 Which representation shows $y$ as a function of $x$?

A




B




C

| $x$ | $y$ |
|---|---|
| −1 | 0 |
| −1 | 5 |
| −1 | 10 |
| −1 | 15 |

D

| $x$ | $y$ |
|---|---|
| −4 | −8 |
| 0 | 3 |
| 1 | 2 |
| −4 | 10 |

DL: 1.3

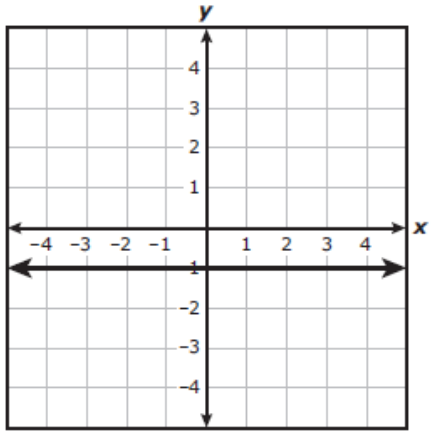
STAAR 2019

**8.5G – 2 (R)**

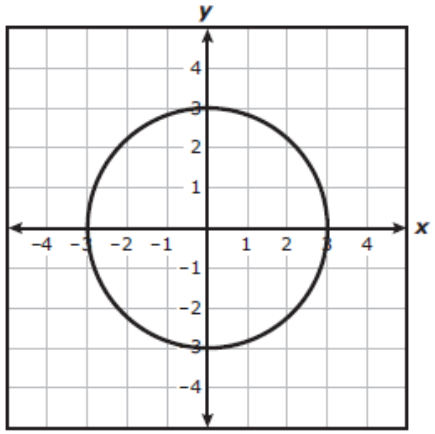
**twenty eight W**

5 Which graph represents $y$ as a function of $x$?

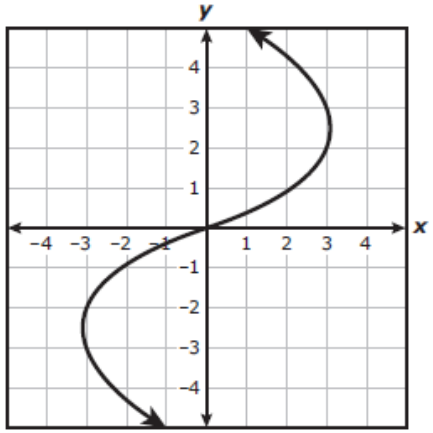
A



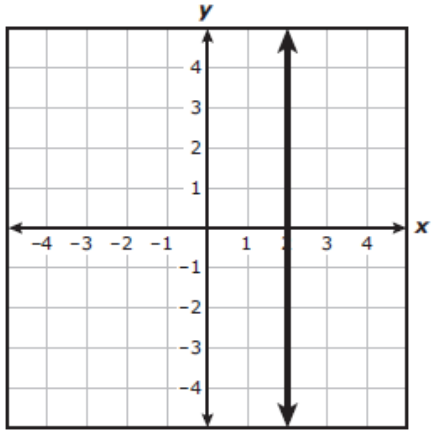

C




B




D




DL: 1

STAAR 2019

**8.5G – 2 (R)** **sixty one Z**

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

**A** $\{(0, 0), (-1, 2), (-1, -2), (-2, 4), (-2, -4)\}$

**B** $\{(0, 0), (1, 1), (2, 4), (3, 9), (3, 16)\}$

**C** $\{(0, 0), (0, 1), (0, 2), (0, -1), (0, -2)\}$

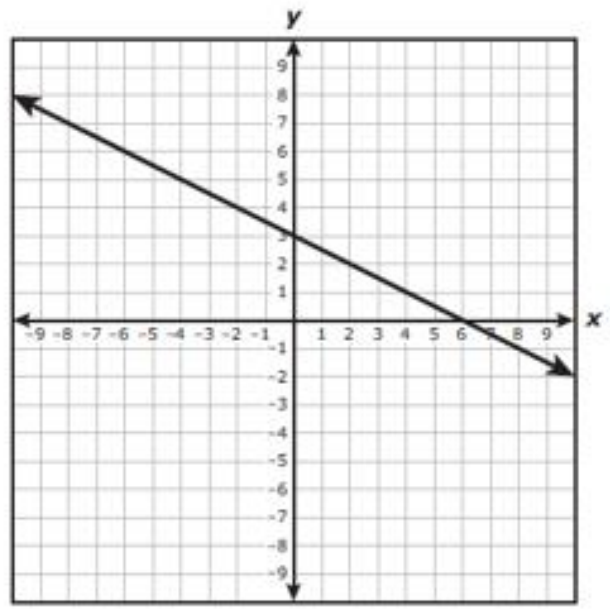
**D** $\{(0, 0), (-1, -0.5), (-2, -1), (-3, -1.5), (-4, -2)\}$

DL: 1

STAAR 2016

**8.5I – 2 (R)** **forty two Z**

**14** Which function is best represented by this graph?




**F** $y = \frac{1}{2}x + 6$

**G** $y = -2x + 3$

**H** $y = 2x + 6$

**J** $y = -\frac{1}{2}x + 3$

DL: 1.8

STAAR 2016

**8.5I – 2 (R)** **forty three W**

**36** Mr. Leonard is renting a car for one day. The table below shows the total amount he will be charged for the car based on the number of miles he drives.

Car Rental

| Number of Miles, $m$ | Total Amount Charged, $c$ |
|---|---|
| 5 | \$30.50 |
| 10 | \$31.00 |
| 15 | \$31.50 |
| 20 | \$32.00 |

Which equation best represents $c$, the number of dollars Mr. Leonard should be charged for driving $m$ miles?

**F** $c = 0.10m + 30$

**G** $c = 30m + 0.10$

**H** $c = 0.50m + 30$

**J** $c = 30m + 0.50$

DL: 2.4

STAAR State of Texas Assessments of Academic Readiness 2016

**8.5I – 2 (R)** **forty four Z**

**54** Frankie bought a new computer. He made an initial payment of $50 to the store, and he will pay $30 each month until the computer is paid off. Which equation represents the relationship between $m$, the number of monthly payments Frankie has made, and $t$, the total amount that Frankie has paid the store?

**F** $t = 50m + 30$

**G** $t = 30m - 50$

**H** $t = 50m - 30$

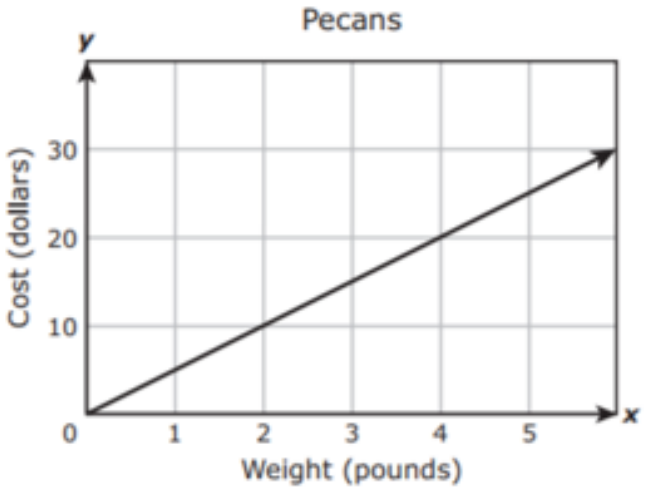
**J** $t = 30m + 50$

DL: 1.5

STAAR State of Texas Assessments of Academic Readiness 2017

**8.5I – 2 (R)** **forty five W**

**19 The graph shows the relationship between the cost of some pecans and the weight of the pecans in pounds.**




**Which function best represents the relationship shown in the graph?**

**A** $y = 5x$

**B** $y = \frac{1}{5}x$

**C** $y = 2x$

**D** $y = \frac{1}{2}x$

DL: 2

STAAR 2017

**8.5I – 2 (R)** **forty six W**

**37** Melissa is saving $25 that she earned for washing her mom's car. She earns $10 every week for doing chores, which she also saves.

Which function can be used to find $t$, the amount of money Melissa will have saved at the end of $n$ weeks of doing chores?

**A** $t = 10n + 25$

**B** $t = 25n + 10$

**C** $t = 35n$

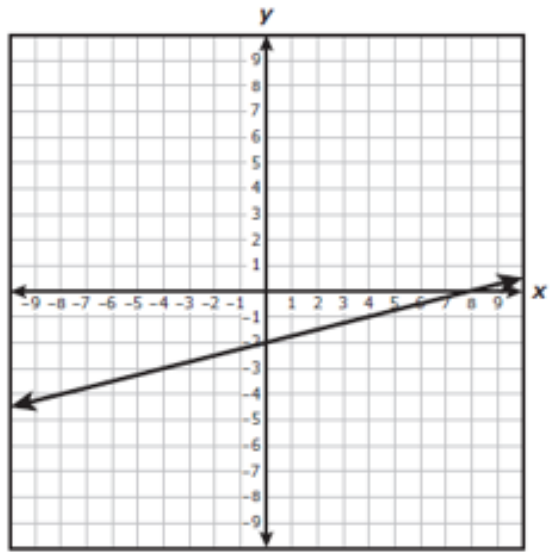
**D** $t = 15n$

DL: 1.3

STAAR 2018

**8.5I – 2 (R)** **forty seven X**

**11** Which function is best represented by this graph?




**A** $y = \frac{1}{4}x + 8$

**B** $y = \frac{1}{4}x - 2$

**C** $y = 4x - 2$

**D** $y = 4x + 8$

DL: 1.8

28 The ticket sales for a concert started at 4:00 P.M. The table shows the linear relationship between the number of tickets remaining and the number of hours since 4:00 P.M.

Ticket Sales

| Hours Since 4 P.M. | Number of Tickets Remaining |
|---|---|
| 1 | 12,000 |
| 2 | 9,000 |
| 3 | 6,000 |
| 4 | 3,000 |
| 5 | 0 |

Which function can be used to find $y$, the number of tickets remaining $x$ hours since 4:00 P.M.?

**F** $y = 3{,}000x + 12{,}000$

**G** $y = 3{,}000x + 15{,}000$

**H** $y = -3{,}000x + 12{,}000$

**J** $y = -3{,}000x + 15{,}000$

DL: 2

STAAR 2019

**8.5I – 2 (R)** **thirty one X**

**12** A coach is ordering shirts for a team.

- The coach pays a one-time fee of $24.
- The coach also pays $8 for each shirt ordered.

Which function can be used to find $c$, the total amount the coach pays in dollars when $k$ shirts are ordered?

**F** $c = 8k + 32$

**G** $c = 8k + 24$

**H** $c = 32k + 8$

**J** $c = 24k + 8$

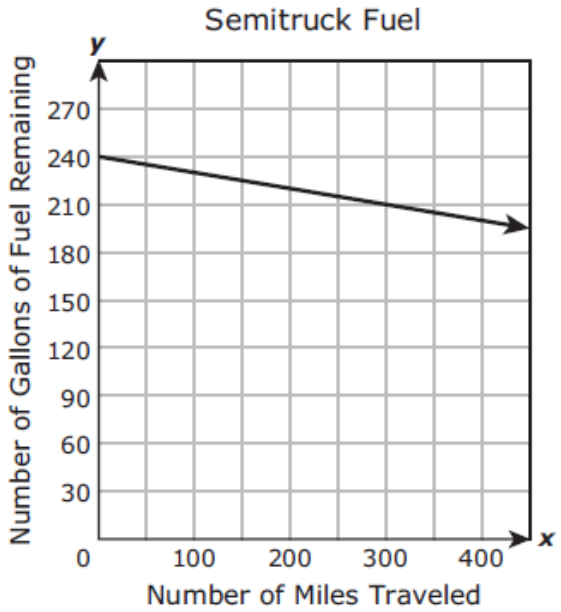
DL: 1.8

STAAR 2019

**8.5I – 2 (R)**

**twenty Z**

**28** The graph shows the relationship between the number of gallons of fuel remaining in the tank of a semitruck and the number of miles traveled by the semitruck.




Which function can be used to find $y$, the number of gallons of fuel remaining in the tank of the semitruck after it has traveled $x$ miles?

**F** $y = 240x - 30$

**G** $y = -\frac{1}{6}x + 240$

**H** $y = 240x - 10$

**J** $y = -\frac{1}{10}x + 240$

DL: 2.5

STAAR State of Texas Assessments of Academic Readiness 2016

**8.7A – 3 (R)** **forty nine Z**

**17** A ball shaped like a sphere has a radius of 2.7 centimeters. Which measurement is closest to the volume of the ball in cubic centimeters?

**A** 46.38 $cm^3$

**B** 33.93 $cm^3$

**C** 122.15 $cm^3$

**D** 82.45 $cm^3$

DL: 2

STAAR State of Texas Assessments of Academic Readiness **2016**

**8.7A – 3 (R)** **fifty X**

**38** A storage container for oil is in the shape of a cylinder with a diameter of 10 ft and a height of 17 ft. Which measurement is closest to the volume of the storage container in cubic feet?

**F** 534 $ft^3$

**G** 1,335 $ft^3$

**H** 691 $ft^3$

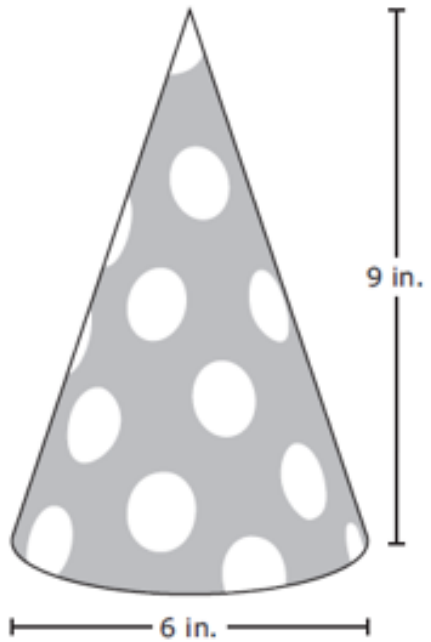
**J** 1,696 $ft^3$

DL: 1.9

STAAR 2016

**8.7A – 3 (R)** **fifty one W**

**55** A party hat is shaped like a cone. The dimensions of the party hat are shown in the diagram.




Which measurement is closest to the volume of the party hat in cubic inches?

**A** 84.82 $in.^3$

**B** 339.29 $in.^3$

**C** 254.47 $in.^3$

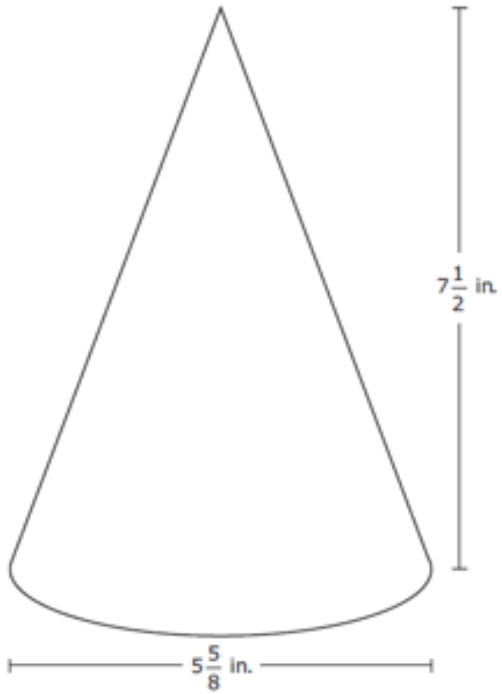
**D** 1,017.88 $in.^3$

DL: 2

STAAR State of Texas Assessments of Academic Readiness 2017

**8.7A – 3 (R)** **fifty two Z**

**24** A cone and its dimensions are shown in the diagram.




Which measurement is closest to the volume of the cone in cubic inches?

**F** 186.38 $in.^3$

**G** 248.50 $in.^3$

**H** 745.51 $in.^3$

**J** 62.13 $in.^3$

DL: 2.8

STAAR 2017

**8.7A – 3 (R)** **fifty three X**

**41** A container that holds sugar is shaped like a cylinder. The radius of the container is 3 inches, and the height of the container is 10.5 inches.

Which measurement is closest to the volume of the container in cubic inches?

**A** 254.47 $in.^3$

**B** 296.88 $in.^3$

**C** 395.84 $in.^3$

**D** 197.92 $in.^3$

DL: 2

STAAR 2018

**8.7A – 3 (R)** **fifty four W**

**1** A fishbowl shaped like a sphere is filled with water. The fishbowl has a diameter of 16 inches. Which measurement is closest to the volume of water in the fishbowl in cubic inches?

**A** 2,144.66 $in.^3$

**B** 17,157.28 $in.^3$

**C** 5,461.67 $in.^3$

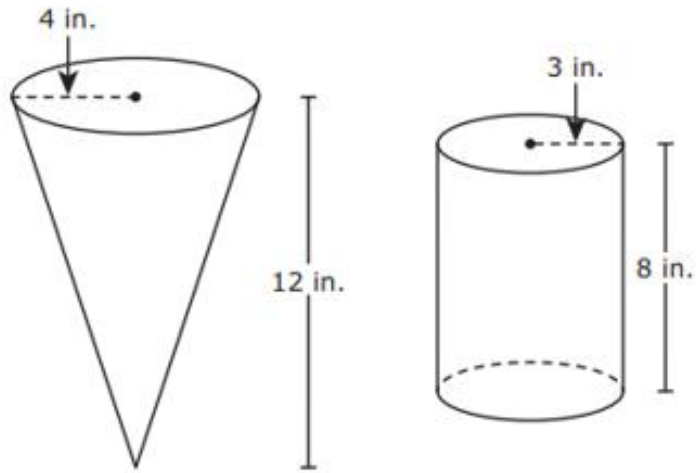
**D** 6,433.98 $in.^3$

DL: 2

STAAR 2018

**8.7A – 3 (R)** **fifty five Y**

**25** Snacks at a county fair are sold in containers shaped like a cone or a cylinder. The dimensions of each container are shown in the drawing.




Which statement about the volumes of the cone and the cylinder is true?

**A** The volume of the cylinder is about 377 cubic inches greater than the volume of the cone.

**B** The volume of the cylinder is about 377 cubic inches less than the volume of the cone.

**C** The volume of the cylinder is about 25 cubic inches greater than the volume of the cone.

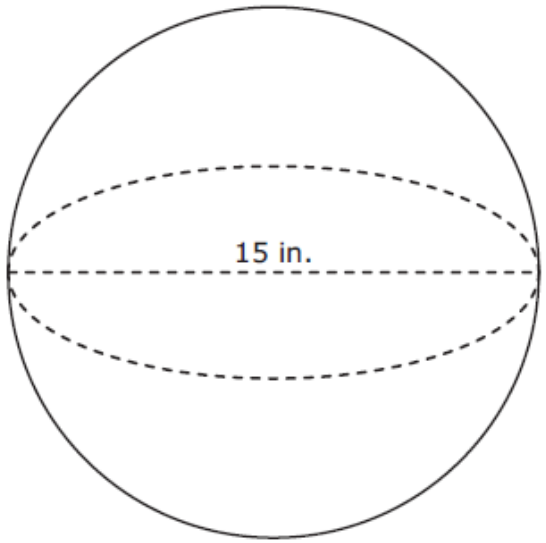
**D** The volume of the cylinder is about 25 cubic inches less than the volume of the cone.

DL: 3

STAAR State of Texas Assessments of Academic Readiness 2019

**8.7A – 3 (R)** **twenty two Z**

**2** A sphere and its dimension are shown in the diagram.




Which measurement is closest to the volume of the sphere in cubic inches?

**F** 1,325.4 $in.^3$

**G** 188.5 $in.^3$

**H** 94.2 $in.^3$

**J** 1,767.1 $in.^3$

DL: 2

STAAR 2019

**8.7A – 3 (R)** **thirty one Y**

**31** The height of a cylinder is 5 centimeters. The circumference of the base of the cylinder is $16\pi$ centimeters.

Which measurement is closest to the volume of the cylinder in cubic centimeters?

**A** 251.3 $cm^3$

**B** 4,021.2 $cm^3$

**C** 1,005.3 $cm^3$

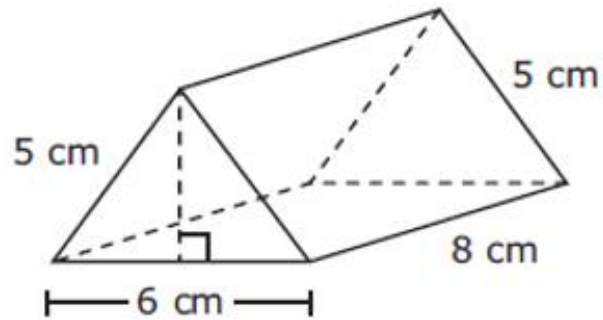
**D** 628.3 $cm^3$

DL: 2

STAAR 2016

**8.7B – 3 (R)** **fifty six X**

**10** A triangular prism and its dimensions are shown in the diagram.




What is the lateral surface area of this triangular prism in square centimeters?

**F** 192 $cm^2$

**G** 128 $cm^2$

**H** 152 $cm^2$

**J** 144 $cm^2$

DL: 2

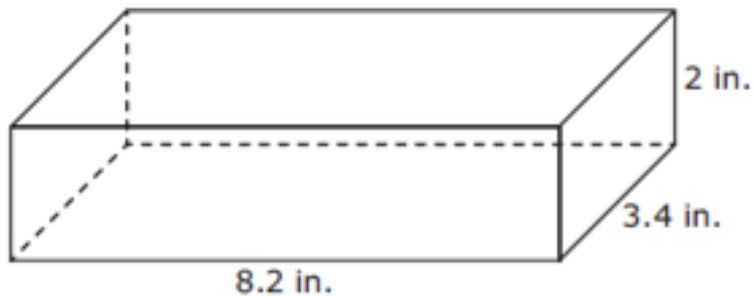
STAAR 2016

**8.7B – 3 (R)**

**fifty seven 102.16**

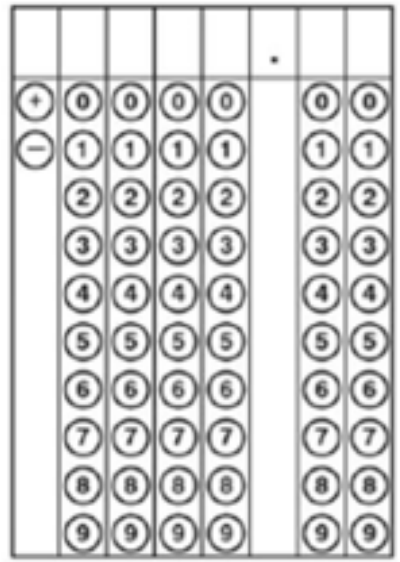
Grades 6–8 Mathematics

45 A rectangular prism and its dimensions are shown in the diagram.




What is the total surface area of this rectangular prism in square inches?

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

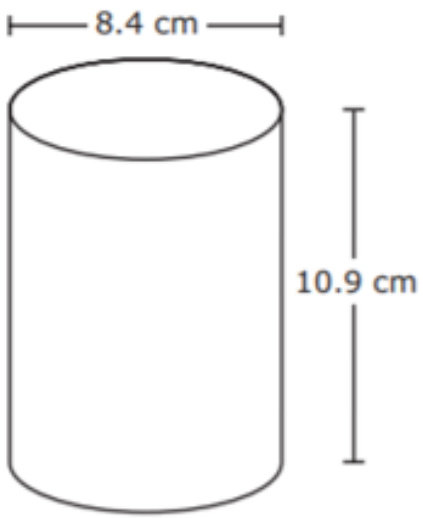



DL: 2

STAAR 2017

**8.7B – 3 (R)** **fifty eight X**

**14** A cylinder and its dimensions are shown in the diagram.




Which measurement is closest to the lateral surface area of the cylinder in square centimeters?

**F** 575.3 $cm^2$

**G** 287.6 $cm^2$

**H** 398.5 $cm^2$

**J** 604.1 $cm^2$

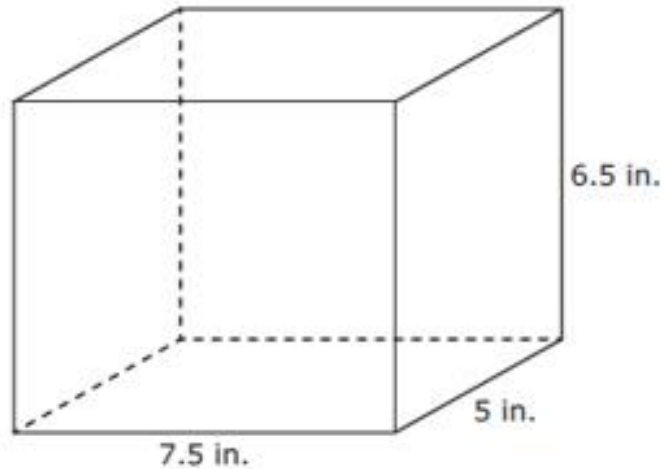
DL: 2

STAAR 2017

**8.7B – 3 (R)**

**fifty nine 237.5**

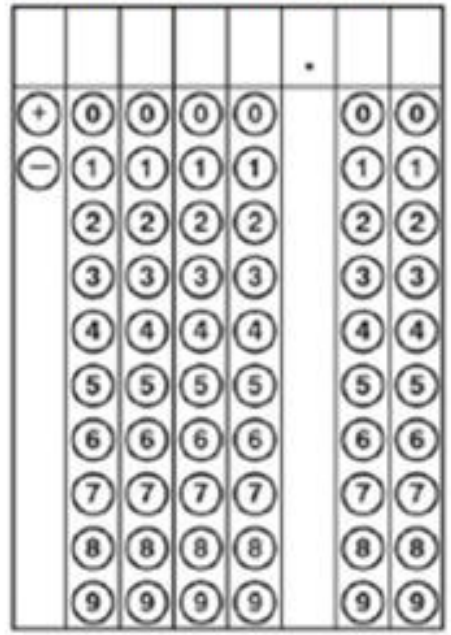
38 A rectangular prism and its dimensions are shown in the diagram.




What is the total surface area of this prism in square inches?

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

Grades 6–8 Mathematics



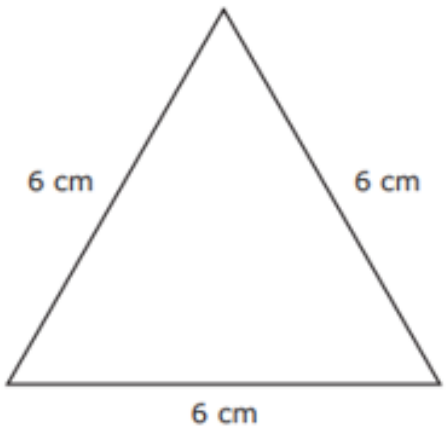

DL: 2

STAAR 2018

**8.7B – 3 (R)**

**sixty 270**

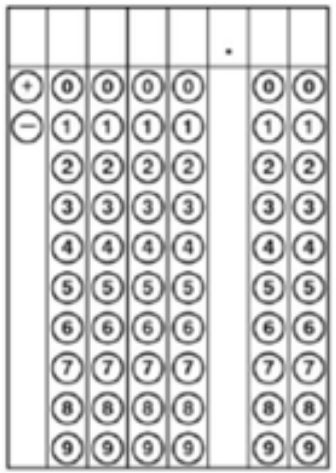
**9** A container is shaped like a triangular prism. Each base of the container is an equilateral triangle with the dimensions shown.




The container has a height of 15 centimeters. What is the lateral surface area of the container in square centimeters?

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

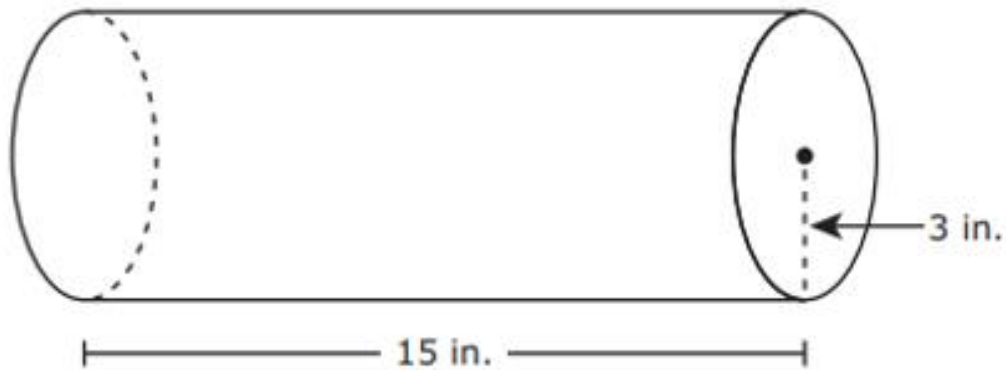
Grades 6–8 Mathematics



DL: 2.4

**8.7B – 3 (R)** **sixty one Y**

**39** An architect uses a cylindrical container to protect her blueprints. The dimensions of the cylinder are shown in the diagram.




Which measurement is closest to the total surface area of the container in square inches?

**A** 424.12 $in.^2$

**B** 791.68 $in.^2$

**C** 339.29 $in.^2$

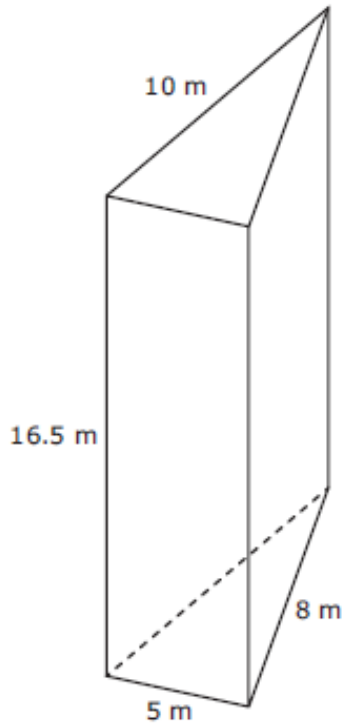
**D** 282.74 $in.^2$

DL: 2

STAAR 2019

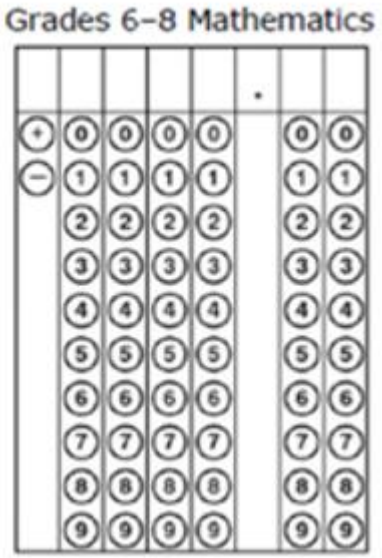
**8.7B – 3 (R)** **thirty five 379.5**

**34** The side lengths of the base of a triangular prism are 5 meters, 8 meters, and 10 meters. The height of the prism is 16.5 meters.




What is the lateral surface area of the prism in square meters?

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




DL: 2.4

STAAR State of Texas Assessments of Academic Readiness 2019

**8.7B – 3 (R)** **fifty X**

**26** A can in the shape of a cylinder has a diameter of 6 centimeters and a height of 10 centimeters. Which measurement is closest to the total surface area of the can in square centimeters?

**F** 603.19 $cm^2$

**G** 245.04 $cm^2$

**H** 376.99 $cm^2$

**J** 188.50 $cm^2$

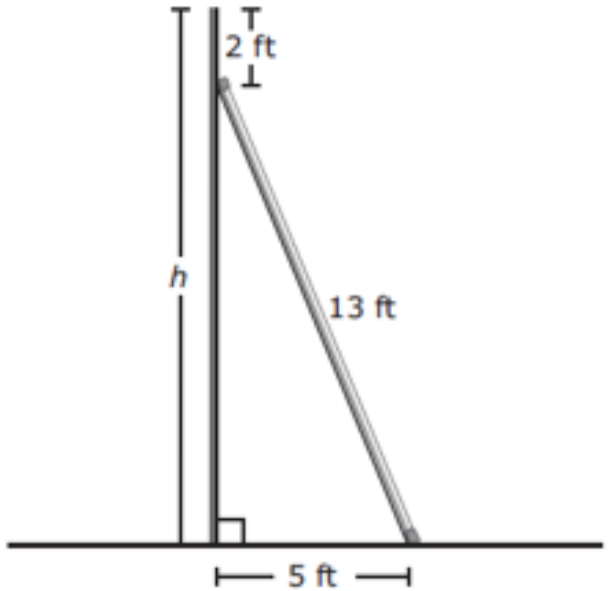
DL: 2

STAAR 2016

**8.7C – 3 (R)**

**sixty two 14**

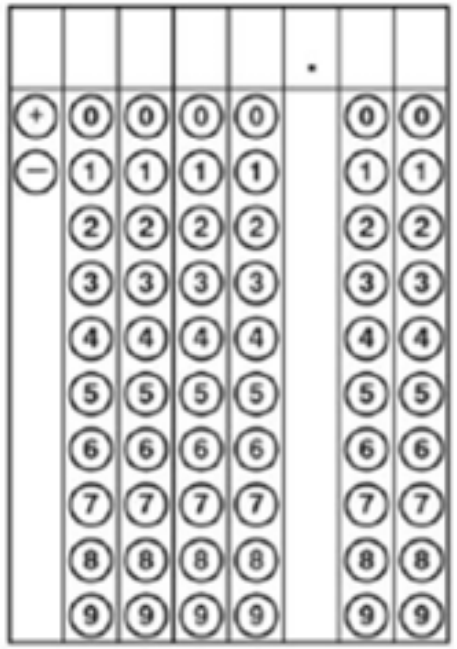
15 The set designer for a play painted some background scenery on a large piece of plywood. He used a 13-foot-long pole to hold the piece of plywood upright, as shown in the diagram below.




What is $h$, the total height in feet of the piece of plywood?

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

Grades 6–8 Mathematics

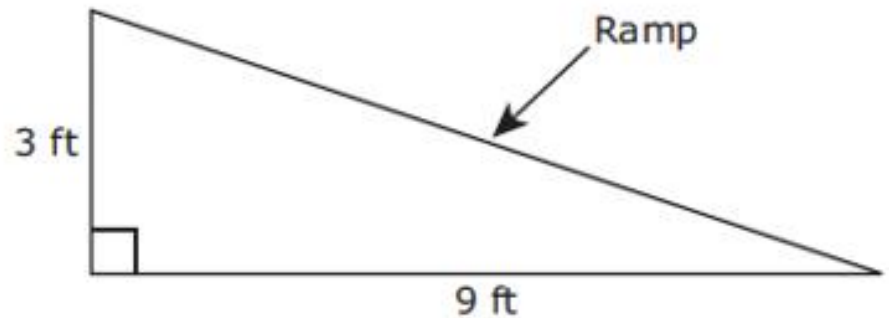



DL: 2.2

STAAR 2016

**8.7C – 3 (R)** **sixty three Y**

**32** The diagram below shows the side view of a ramp used to help load and unload a moving van.




Which measurement is closest to the length of the ramp in feet?

**F** 8.5 ft

**G** 10.5 ft

**H** 9.5 ft

**J** 13.5 ft

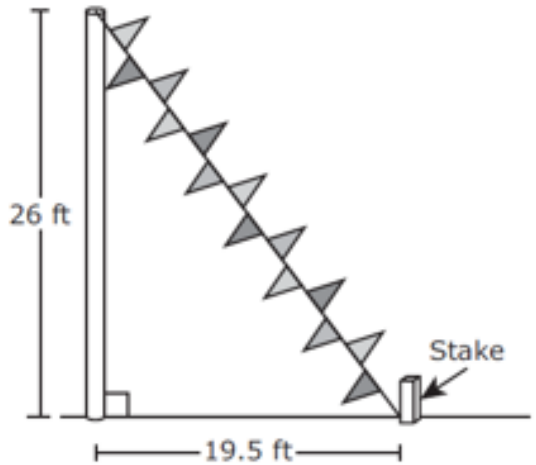
DL: 1.2

STAAR State of Texas Assessments of Academic Readiness **2017**

**8.7C – 3 (R)**

**sixty four 32.5**

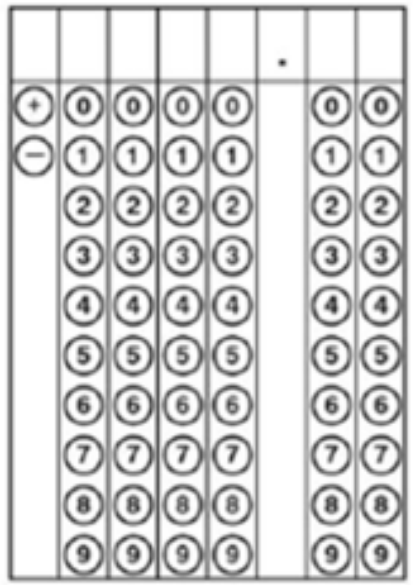
**9** The manager of a car dealership wants to attach a rope with flags to the top of a pole and to a stake in the ground, as shown in the diagram.




Based on the diagram, what is the distance in feet from the top of the pole to the bottom of the stake?

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

Grades 6–8 Mathematics

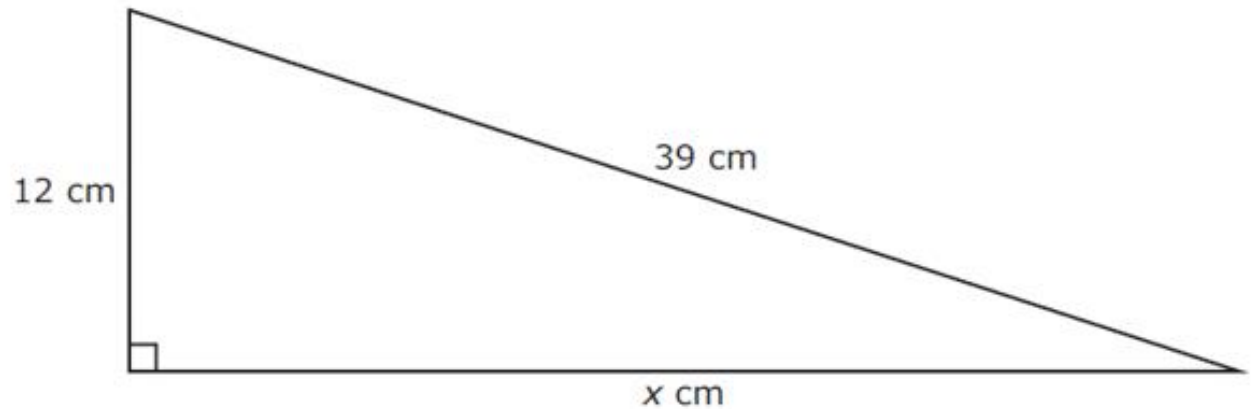



DL: 2

STAAR 2017

**8.7C – 3 (R)** **sixty five W**

**33** A right triangle and two of its side lengths are shown in the diagram.




Which measurement is closest to the value of $x$ in centimeters?

**A** 37.1 cm

**B** 40.8 cm

**C** 27 cm

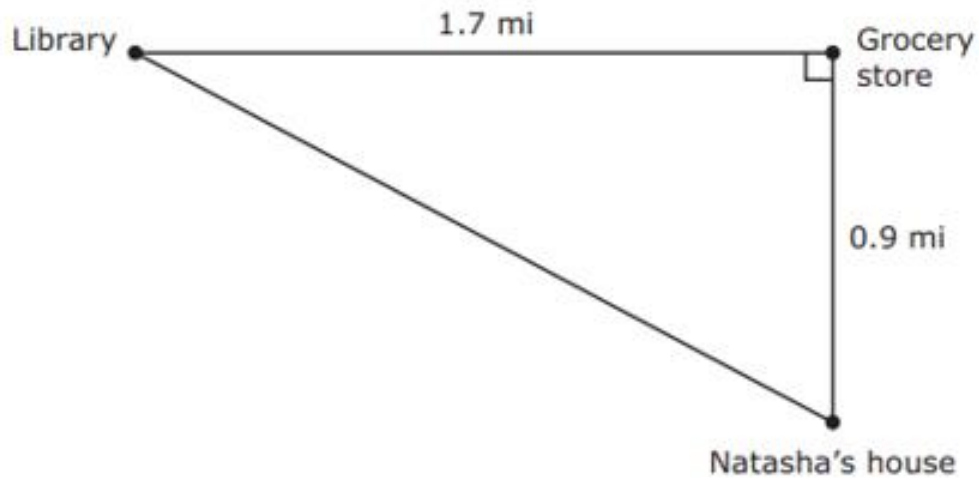
**D** 51 cm

DL: 1.7

STAAR 2018

**8.7C – 3 (R)** **sixty six X**

**5** Natasha walked from the library to the grocery store and then to her house. The diagram shows the top view of the locations of these three places and their distances from each other.




Which measurement is closest to the shortest distance in miles from Natasha's house to the library?

**A** 2.6 mi

**B** 1.9 mi

**C** 1.4 mi

**D** 2.3 mi

DL: 1

STAAR 2018

**8.7C – 3 (R)** **sixty seven Z**

**33** The dimensions of a rectangular piece of paper are 8.5 inches and 11 inches. Veronica folded the piece of paper along its diagonal. Which measurement is closest to the length of the diagonal in inches?

**A** 6.24 in.

**B** 19.5 in.

**C** 6.98 in.

**D** 13.9 in.

DL: 2.5

STAAR State of Texas Assessments of Academic Readiness 2019

**8.7C – 3 (R)** **twenty six Y**

**8** The width of a rectangle is 4 feet, and the diagonal length of the rectangle is 13 feet. Which measurement is closest to the length of this rectangle in feet?

**F** 9 ft

**G** 17 ft

**H** 12.4 ft

**J** 13.6 ft

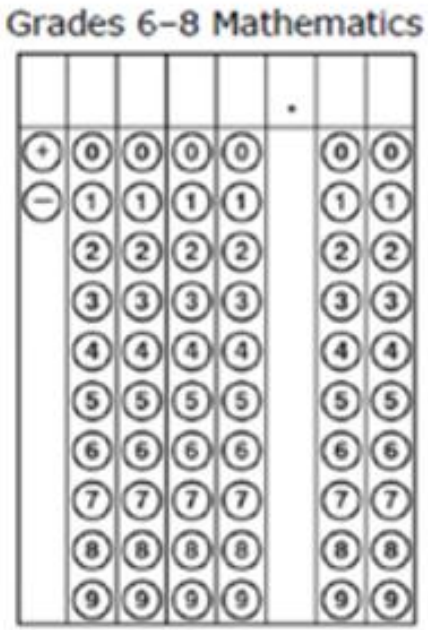
DL: 2

STAAR 2019

**8.7C – 3 (R)** **thirty one 17**

38 The length of a rectangular frame is 15 inches, and the width of the frame is 8 inches. What is the length of a diagonal of this frame in inches?

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




DL: 2

STAAR 2016

**8.8C – 2 (R)** **sixty eight W**

**7** Carnival M charges an entrance fee of $5.00 and $0.65 per ticket for the rides. Carnival P charges an entrance fee of $10.00 and $0.45 per ticket for the rides. How many tickets must be purchased in order for the total cost at Carnival M and Carnival P to be the same?

**A** 25

**B** 10

**C** 50

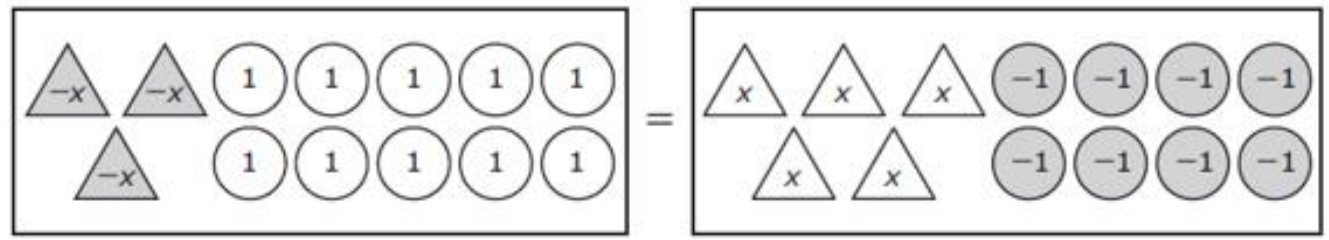
**D** 75

DL: 2.8

STAAR 2016

**8.8C – 2 (R)** **sixty nine 2.25**

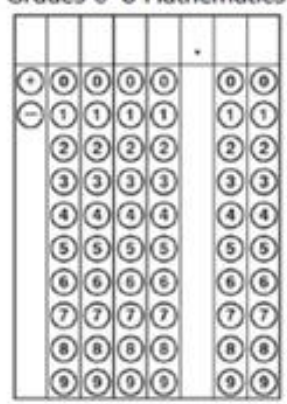
**31** The model represents an equation.




What value of $x$ makes the equation true?

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

Grades 6–8 Mathematics



DL: 2.2

STAAR State of Texas Assessments of Academic Readiness 2016

**8.8C – 2 (R)** **seventy Z**

**44** The measures of two angles are $(5x + 24)°$ and $(9x - 17)°$. What is the value of $x$ if these angles are congruent?

**F** 1.75

**G** 13.2

**H** 0.5

**J** 10.25

DL: 2

STAAR State of Texas Assessments of Academic Readiness **2017**

**8.8C – 2 (R)** **seventy one Z**

**12** What value of $x$ makes this equation true?

$$\frac{x}{3} - 3 = \frac{x}{9} + 3$$

**F** 3

**G** –9

**H** –1

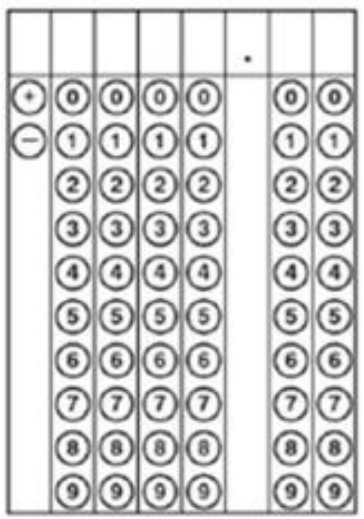
**J** 27

DL: 2

**23** A rectangle's perimeter and its area have the same numerical value. The width of the rectangle is 3 units. What is the length of the rectangle in units?

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

Grades 6–8 Mathematics




DL: 2.5

STAAR 2018

**8.8C – 2 (R)** **seventy three Y**

**8** Julie started with 20 pieces of gum and gave away $x$ pieces. Conrad started with 35 pieces of gum and gave away twice as many pieces as Julie did.

How many pieces of gum did Julie give away if they had the same number of pieces of gum left?

**F** 18

**G** 5

**H** 15

**J** 8

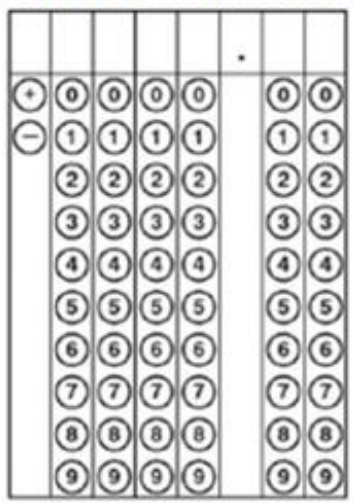
DL: 1.8

**23** What is the solution to this equation?

$$2x + 3 = x - 4$$

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

Grades 6–8 Mathematics




DL: 1.5

STAAR State of Texas Assessments of Academic Readiness 2019

**8.8C – 2 (R)** **seventy one Y**

**7** Aquarium I contains 4.6 gallons of water. Louise will begin filling Aquarium I at a rate of 1.2 gallons per minute.

Aquarium II contains 54.6 gallons of water. Isaac will begin draining Aquarium II at a rate of 0.8 gallon per minute.

After how many minutes will both aquariums contain the same amount of water?

**A** 148 min

**B** 125 min

**C** 25 min

**D** 50 min

DL: 3

STAAR 2019

**8.8C – 2 (R)** **thirty eight Z**

**14** What value of $x$ makes this equation true?

$$12x - 15 = 6 - 3x$$

**F** $\frac{7}{3}$

**G** $\frac{3}{7}$

**H** $\frac{5}{7}$

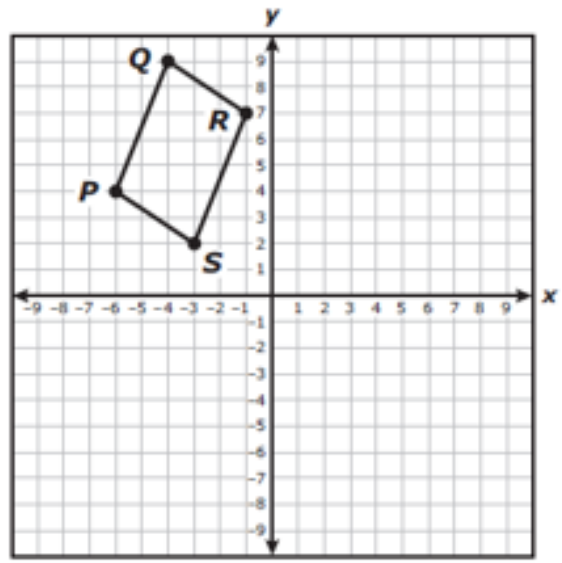
**J** $\frac{7}{5}$

DL: 2

STAAR 2016

**8.10C – 3 (R)** **seventy five Z**

**8** The coordinate grid shows parallelogram *PQRS*.




Parallelogram *PQRS* is rotated 90° clockwise about the origin to create parallelogram $P'Q'R'S'$.
Which rule describes this transformation?

**F** $(x, y) \rightarrow (x, -y)$

**G** $(x, y) \rightarrow (-x, y)$

**H** $(x, y) \rightarrow (y, x)$

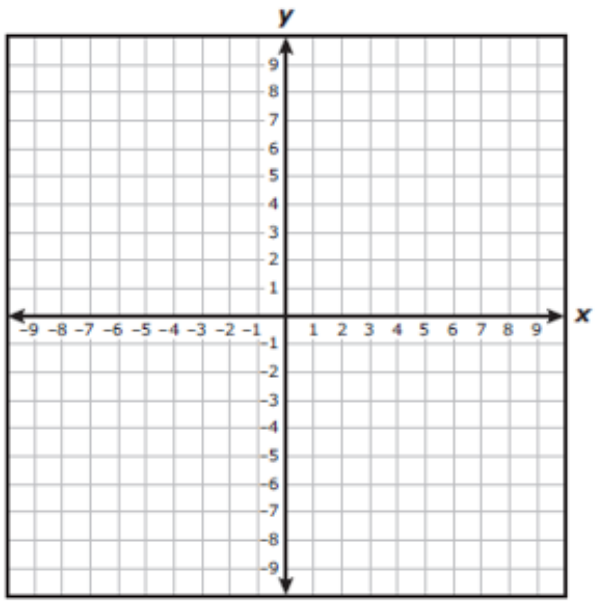
**J** $(x, y) \rightarrow (y, -x)$

DL: 3

STAAR State of Texas Assessments of Academic Readiness 2016

**8.10C – 3 (R)** **seventy six X**

**19** The coordinates of the vertices of a quadrilateral are $P\,(1, 2)$, $R\,(1, 4)$, $S\,(3, 4)$, and $T\,(4, 2)$.




Quadrilateral $PRST$ is reflected across the $y$-axis to create quadrilateral $P'R'S'T'$. Which rule describes this transformation?

**A** $(x, y) \rightarrow (x, -y)$

**B** $(x, y) \rightarrow (-x, y)$

**C** $(x, y) \rightarrow (y, -x)$

**D** $(x, y) \rightarrow (-y, x)$

DL: 3

STAAR State of Texas Assessments of Academic Readiness 2016

**8.10C – 3 (R)** **seventy seven X**

**40** Triangle *ABC* was translated 2 units to the right and 3 units down. Which rule describes the translation that was applied to triangle *ABC* to create triangle *A′B′C′*?

**F** $(x, y) \rightarrow (x - 3, y + 2)$

**G** $(x, y) \rightarrow (x + 2, y - 3)$

**H** $(x, y) \rightarrow (2x, -3y)$

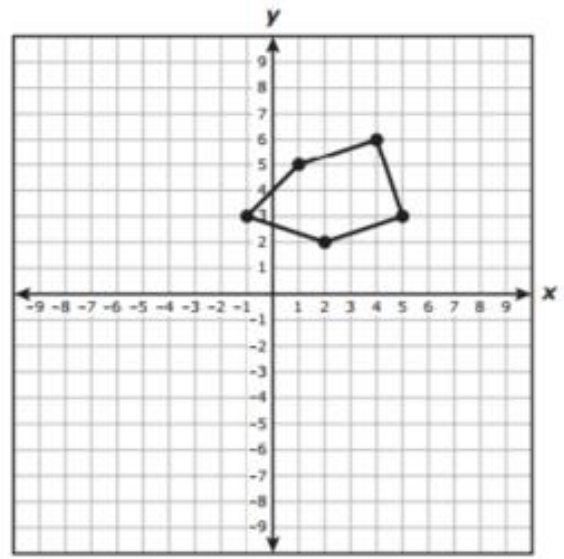
**J** $(x, y) \rightarrow (-3x, 2y)$

DL: 1.6

STAAR 2017

**8.10C – 3 (R)** **seventy eight W**

**2** The coordinate grid shows a pentagon. The pentagon is translated 1 unit to the left and 10 units down to create a new pentagon.




Which rule describes this transformation?

**F** $(x, y) \rightarrow (x - 1, y - 10)$

**G** $(x, y) \rightarrow (x + 1, y - 10)$

**H** $(x, y) \rightarrow (x - 1, y + 10)$

**J** $(x, y) \rightarrow (x + 1, y + 10)$

DL: 2.4

STAAR State of Texas Assessments of Academic Readiness **2017**

**8.10C – 3 (R)** **seventy nine Y**

**27** A circle is graphed on a coordinate grid and then reflected across the $y$-axis. If the center of the original circle was located at $(x, y)$, which ordered pair represents the center of the new circle after the transformation?

**A** $(x, y)$

**B** $(x, -y)$

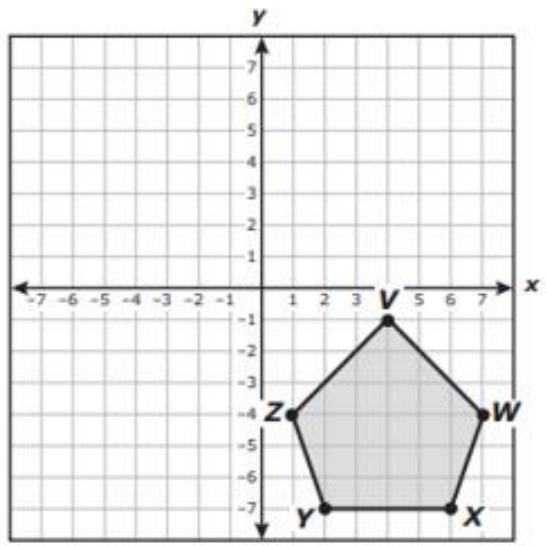
**C** $(-x, y)$

**D** $(-x, -y)$

STAAR 2018

**8.10C – 3 (R)** **eighty W**

**21** Pentagon *VWXYZ* is shown on the coordinate grid. A student reflected pentagon *VWXYZ* across the *x*-axis to create pentagon *V′W′X′Y′Z′*.




Which rule describes this transformation?

**A** $(x, y) \rightarrow (x, -y)$

**B** $(x, y) \rightarrow (x, y + 8)$

**C** $(x, y) \rightarrow (-y, x)$

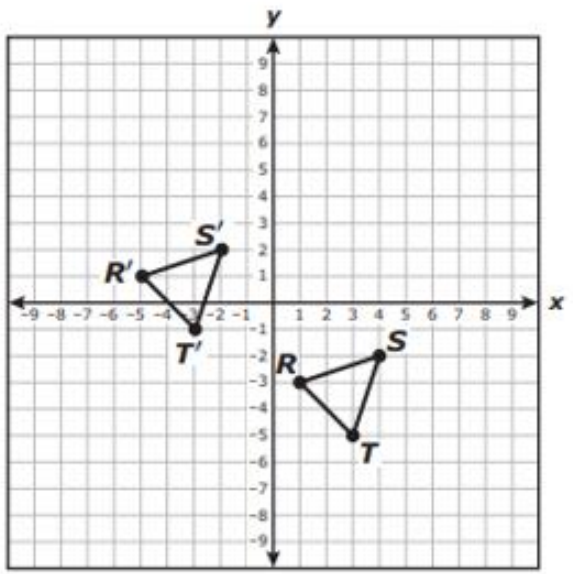
**D** $(x, y) \rightarrow (-x, y)$

DL: 2.4

STAAR 2018

**8.10C – 3 (R)** **eighty one Z**

**31** Triangle *RST* is translated 6 units to the left and 4 units up to create triangle *R′S′T′*.




Which rule best describes this transformation?

**A** $(x, y) \rightarrow (6x, -4y)$

**B** $(x, y) \rightarrow (-6x, 4y)$

**C** $(x, y) \rightarrow (x + 6, y - 4)$

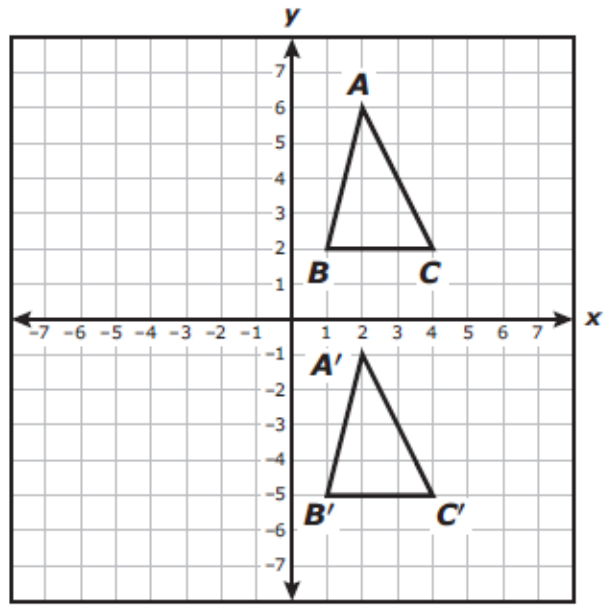
**D** $(x, y) \rightarrow (x - 6, y + 4)$

DL: 2.4

STAAR 2019

**8.10C – 3 (R)** **thirty five W**

**10** Triangle $ABC$ was transformed to create triangle $A'B'C'$.




Which rule best describes this transformation?

**F** $(x, y) \rightarrow (x, y - 7)$

**G** $(x, y) \rightarrow (x, -y)$

**H** $(x, y) \rightarrow (x - 7, y)$

**J** $(x, y) \rightarrow (-x, y)$

DL: 2

STAAR 2019

**8.10C – 3 (R)** **sixty five X**

42 Quadrilateral $PQRS$ was translated 5 units to the right and 3 units up to create quadrilateral $P'Q'R'S'$. Which rule describes this transformation?

F $(x, y) \rightarrow (x - 5, y - 3)$

G $(x, y) \rightarrow (x + 5, y + 3)$

H $(x, y) \rightarrow (x - 3, y - 5)$

J $(x, y) \rightarrow (x + 3, y + 5)$

DL: 2.4

STAAR State of Texas Assessments of Academic Readiness 2016

**8.12D – 4 (R)** **eighty two W**

4 Tamara invested $15,000 in an account that pays 4% annual simple interest. Tamara will not make any additional deposits or withdrawals. How much interest will Tamara earn on her investment at the end of 3 years?

**F** $1,800

**G** $600

**H** $450

**J** $1,873

DL: 1.4

STAAR 2016

**8.12D – 4 (R)** **eighty three Z**

**41** Nicolas has $650 to deposit into two different savings accounts.

- Nicolas will deposit $400 into Account I, which earns 3.5% annual simple interest.
- He will deposit $250 into Account II, which earns $3\frac{1}{4}$% interest compounded annually.

Nicolas will not make any additional deposits or withdrawals. Which amount is closest to the total balance of these two accounts at the end of 2 years?

**A** $672.13

**B** $695.00

**C** $694.25

**D** $694.51

DL: 2.5

STAAR 2017

**8.12D – 4 (R)** **eighty four W**

**16** Mr. Wilkins deposited $2,500 in a new account at his bank.

- The bank pays 6.5% interest compounded annually on this account.
- Mr. Wilkins makes no additional deposits or withdrawals.

Which amount is closest to the balance of the account at the end of 2 years?

**F** $2,835.56

**G** $2,513.00

**H** $2,662.50

**J** $2,825.00

DL: 1.5

STAAR State of Texas Assessments of Academic Readiness **2017**

**8.12D – 4 (R)** **eighty five X**

**35** Mr. Flores opened an account with a deposit of $5,000.

- The account earned annual simple interest.
- He did not make any additional deposits or withdrawals.
- At the end of 4 years, the balance of the account was $6,500.

What is the annual interest rate on this account?

**A** 5.8%

**B** 7.5%

**C** 3.3%

**D** 1.9%

DL: 2

STAAR 2018

**8.12D – 4 (R)** **eighty six Z**

**12** An employee put $5,000.00 in a retirement account that offers 9% interest compounded annually. The employee makes no additional deposits or withdrawals. Which amount is closest to the interest the employee will have earned at the end of 5 years?

**F** $229.09

**G** $450.00

**H** $2,250.00

**J** $2,693.12

DL: 1.2

STAAR 2018

**8.12D – 4 (R)** **eighty seven X**

**24** An investor puts $2,500 into a life insurance policy that pays 8.5% simple annual interest. If no additional investment is made into the policy, how much accumulated interest should the investor expect at the end of 10 years?

**F** $21,250.00

**G** $2,125.00

**H** $212.50

**J** $21.25

DL: 1.6

STAAR 2019

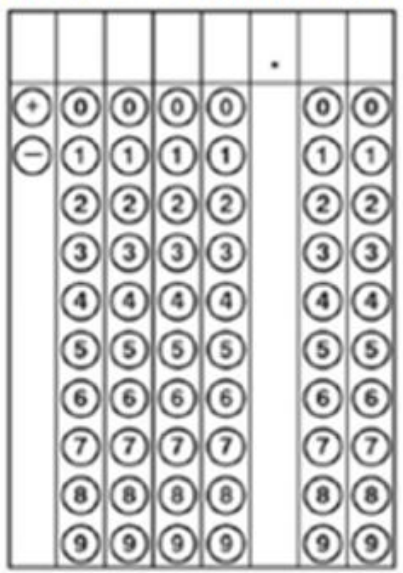
**8.12D – 4 (R)** **sixty 1462.5**

**23** Mr. Jenkins deposited $1,250 into an account. He made no additional deposits or withdrawals. Mr. Jenkins earned 4.25% annual simple interest on the money in the account.

What was the balance in dollars and cents in Mr. Jenkins's account at the end of 4 years?

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

Grades 6–8 Mathematics



DL: 2

STAAR 2019

**8.12D – 4 (R)** **forty three X**

**40** Gabriel deposits $2,500 into each of two savings accounts.

- Account I earns 4% annual simple interest.
- Account II earns 4% interest compounded annually.

Gabriel does not make any additional deposits or withdrawals. What is the sum of the balances of Account I and Account II at the end of 3 years?

**F** $5,600.00

**G** $5,612.16

**H** $5,624.32

**J** $5,200.00

DL: 3