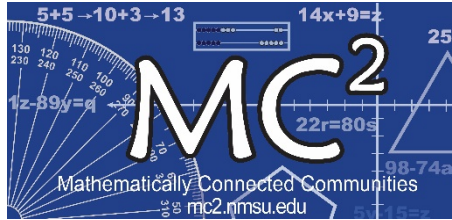


Mathematically Connected Communities



PARCC Practice Test Items Grade 8 Mathematics

Excerpted 10/2016 from
PARCC Paper-Based and Computer-Based
Practice Tests*

<https://parcc.pearson.com/practice-tests/math/>

*Note PARCC Computer-Based Practices test items are located at the end of each unit and are not numbered sequentially.

Mathematical Practice Questions for MC² Thinking Protocol

Use the MC² Thinking Protocol and follow the process below in working with the PARCC practice test items found in this packet:

1. Choose items from this packet that relate to math concepts studied in the current or previous curriculum units during your math instruction. Each item may be used as a practice item worksheet.
2. Choose a set of **Thinking/Writing Prompts** below based on the math practice the class is working to develop.
3. Add the prompts to the practice item worksheet or display the prompts for the students to respond to.
4. Continue using the same set of prompts for an extended period of time so children develop competence and confidence in describing their mathematical thinking related to the math practice.

The questions below were intentionally not included on each MC² PARCC practice test item worksheet in this packet. These are intended to help students move beyond “answer getting” to fully making sense of test item questions and their own mathematical thinking.

Thinking/Writing Prompts to Promote Mathematical Practices

Math Practice 1: Make sense of problems and persevere in solving them.

1. What do you know about the problem?
2. What questions do you have?
3. Explain your reasoning or thinking in solving the problem.

Math Practice 3: Construct viable arguments and critique the reasoning of others.

1. What are the assumptions, definitions, and previous knowledge to help in thinking about this problem?
2. What are some possible conjectures that you have about the problem?
3. Explain your mathematical argument so that somebody else can make sense of your thinking.

Math Practice 4: Model with mathematics.

1. What are the important quantities in the problem that are needed to solve it?
2. What mathematical operation(s) or representation(s) will you use to solve the problem?
3. Explain how you know your answer makes sense in the context of the situation.

Math Practice 6: Attend to precision.

1. What are the important units in the problem? (What are we measuring or counting?)
2. What relationship between the units/quantities do you need to know in order to solve the problem?
3. Use appropriate and precise mathematical language, units, labels and computations to clearly describe your mathematical reasoning.

8th Grade PARCC Unit 1 Practice Test Item #1 (Non- Calculator): Standard 8.F.1-1

1. Which of these equations represent functions where x is the input and y is the output?

Select **each** correct answer.

A. $x = 2$

B. $y = 2$

C. $y = 2x$

D. $x = 2y$

E. $x + y = 2$

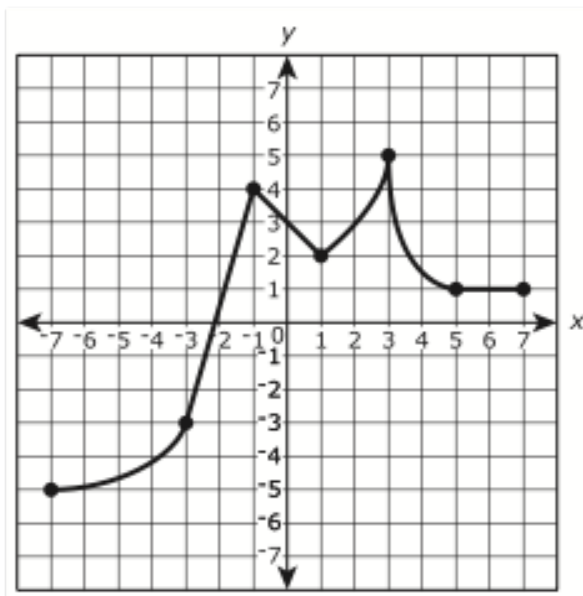
8th Grade PARCC Unit 1 Practice Test Item #2 (Non- Calculator): Standard 8.EE.7.b

2. Solve this equation for x .

$$0.5(5 - 7x) = 8 - (4x + 6)$$

Enter your answer in the box.

3. The graph shows y as a function of x .



For which intervals is the function decreasing?

Select **all** that apply.

- A. $-7 < x < -3$
- B. $-3 < x < -1$
- C. $-1 < x < 1$
- D. $1 < x < 3$
- E. $3 < x < 5$
- F. $5 < x < 7$

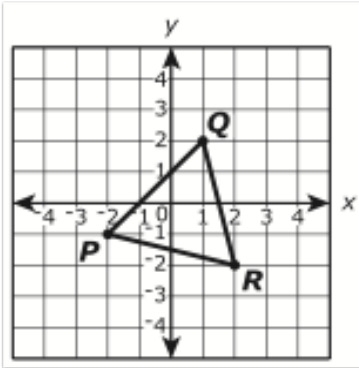
8th Grade PARCC Unit 1 Practice Test Item #4 (Non- Calculator): Standard 8.NS.2

4. Which statement **best** describes the value of $\sqrt{8}$?
- A. The value of $\sqrt{8}$ is between 2 and 2.5.
 - B. The value of $\sqrt{8}$ is between 2.5 and 3.
 - C. The value of $\sqrt{8}$ is between 3 and 3.5.
 - D. The value of $\sqrt{8}$ is between 3.5 and 4.

8th Grade PARCC Unit 1 Practice Test Item #5 (Non- Calculator): Standard 8.G.3

Use the information provided to answer Part A and Part B for question 5.

Triangle PQR is shown on the coordinate plane.



Triangle PQR is rotated 90° counterclockwise about the origin to form the image triangle $P'Q'R'$ (not shown). Then triangle $P'Q'R'$ is reflected across the x -axis to form triangle $P''Q''R''$ (not shown).

5. Part A

What are the signs of the coordinates (x, y) of point P' ?

- A. Both x and y are positive.
- B. x is negative and y is positive.
- C. Both x and y are negative.
- D. x is positive and y is negative.

Part B

What are the signs of the coordinates (x, y) of point Q'' ?

- A. Both x and y are positive.
- B. x is negative and y is positive.
- C. Both x and y are negative.
- D. x is positive and y is negative.

8th Grade PARCC Unit 1 Practice Test Item #6 (Non- Calculator): Standard 8.EE.2

6. Which equation has **both** 4 and -4 as possible values of y ?

A. $y^2 = 8$

B. $y^3 = 8$

C. $y^2 = 16$

D. $y^3 = 64$

8th Grade PARCC Unit 1 Practice Test Item #7 (Non- Calculator): Standard 8.EE.8b-1

7. A system of equations is shown.

$$\begin{cases} x = 10 \\ 3x + 5y = 20 \end{cases}$$

In the system of equations, what is the value of y ?

Enter your answer in the box.

8th Grade PARCC Unit 1 Practice Test Item #8 (Non- Calculator): Standard 8.F.3-2

8. Which equations define y as a nonlinear function of x ?

Select **all** that apply.

A. $y = 7.4x$

B. $y = 2x + 5^2$

C. $y = 10x^2$

D. $y = 5x - 3$

E. $y = \frac{x}{2}$

F. $y = 2x^3 + 1$

8th Grade PARCC Unit 1 Practice Test Item #9 (Non- Calculator): Standard 8.EE.8a

9. Consider the system of equations.

$$\begin{cases} y = 2x + 2 \\ y = 6x + 2 \end{cases}$$

Which statements are true about the system of equations?

Select **each** correct answer.

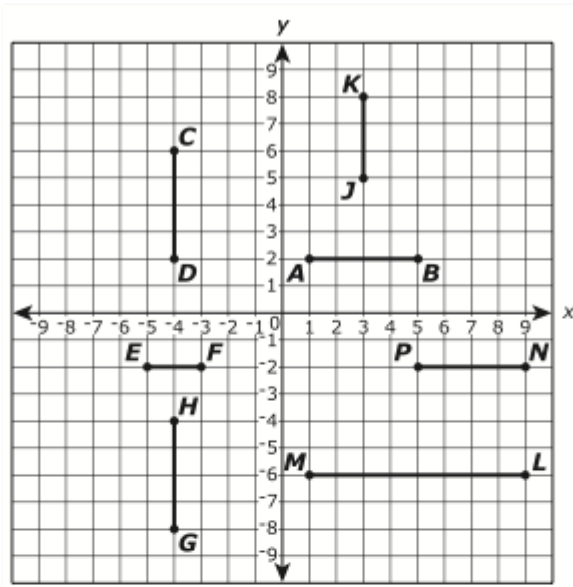
- A. The graph of the system consists of lines that have no points of intersection.
- B. The graph of the system consists of lines that have exactly one point of intersection.
- C. The graph of the system consists of lines that have more than one point of intersection.
- D. The system has no solution.
- E. The system has exactly one solution.
- F. The system has more than one solution.

8th Grade PARCC Unit 1 Practice Test Item #10 (Non- Calculator): Standard 8.NS.1

- 10.** Which decimal is the equivalent of $\frac{6}{11}$?
- A.** $0.18\bar{3}$
 - B.** $0.\overline{183}$
 - C.** $0.5\bar{4}$
 - D.** $0.\overline{54}$

8th Grade PARCC Unit 1 Practice Test Item #11 (Non- Calculator): Standard 8.G.1a

11.



Seven line segments are shown on the coordinate plane.

Which of these segments could be the image of segment AB after a sequence of reflections, rotations, and/or translations?

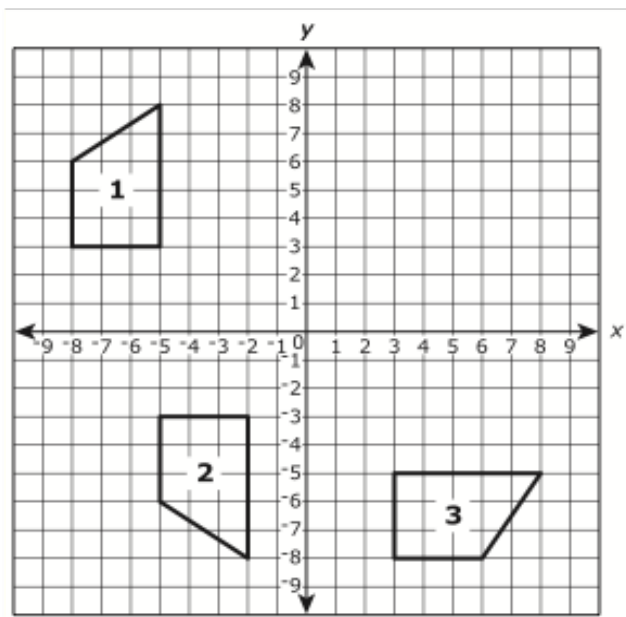
Select **each** correct answer.

- A. line segment CD
- B. line segment EF
- C. line segment GH
- D. line segment JK
- E. line segment LM
- F. line segment NP

8th Grade PARCC Unit 1 Practice Test Item #12 (Non- Calculator): Standard 8.G.2

Use the information provided to answer Part A and Part B for question 12.

Three congruent figures are shown in the coordinate plane.



12. Part A

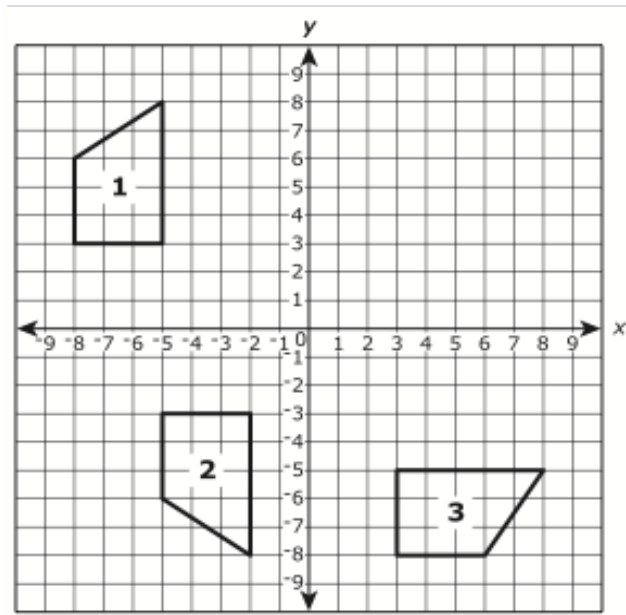
Which statement describes a possible sequence of transformations that transforms figure 1 into figure 2?

- A. a reflection across the x -axis, followed by a translation 2 units to the left
- B. a reflection across the x -axis, followed by a translation 3 units to the right
- C. a rotation 180° clockwise about the origin, followed by a translation 2 units to the left
- D. a rotation 180° clockwise about the origin, followed by a translation 3 units to the right

8th Grade PARCC Unit 1 Practice Test Item #12 (Non- Calculator): Standard 8.G.2 (continued)

Use the information provided to answer Part A and Part B for question 12.

Three congruent figures are shown in the coordinate plane.



Part B

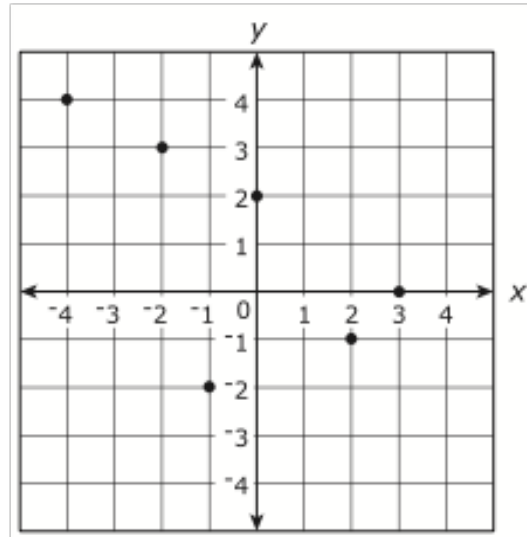
Figure 3 can also be created by transforming figure 1 with a sequence of two transformations.

Which statement describes a possible sequence of transformations that transforms figure 1 into figure 3?

- A. a rotation 180° clockwise about the origin, followed by a translation 2 units to the left
- B. a rotation 90° clockwise about the origin, followed by a reflection across the x -axis
- C. a rotation 180° clockwise about the origin, followed by a reflection across the y -axis
- D. a rotation 90° clockwise about the origin, followed by a translation 3 units to the right

8th Grade PARCC Unit 1 Practice Test Item #13 (Non- Calculator): Standard 8.F.1-2

13. The graph represents y as a function of x .



Which additional point can be plotted so that the graph continues to represent y as a function of x ?

- A.** (0, 1)
- B.** (2, 2)
- C.** (3, 4)
- D.** (4, 2)

8th Grade PARCC Unit 1 Practice Test Item #14 (Non- Calculator): Standard 8.EE.1

14. Which expressions are equivalent to $\frac{3^{-8}}{3^{-4}}$?

Select **all** that apply.

A. 3^{-12}

B. 3^{-4}

C. 3^2

D. $\frac{1}{3^2}$

E. $\frac{1}{3^4}$

F. $\frac{1}{3^{12}}$

8th Grade PARCC Unit 1 Practice Test Item #15 (Non- Calculator): Standard 8.EE.8b-2

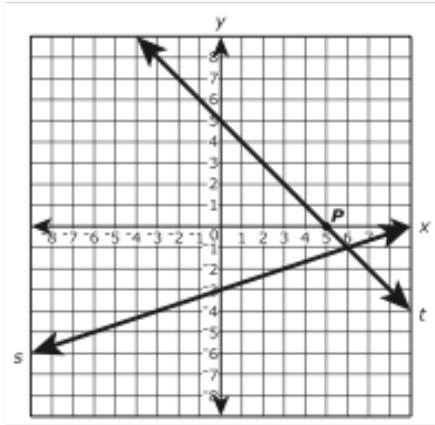
15. The equation of line s is $y = \frac{1}{3}x - 3$.

The equation of line t is $y = -x + 5$.

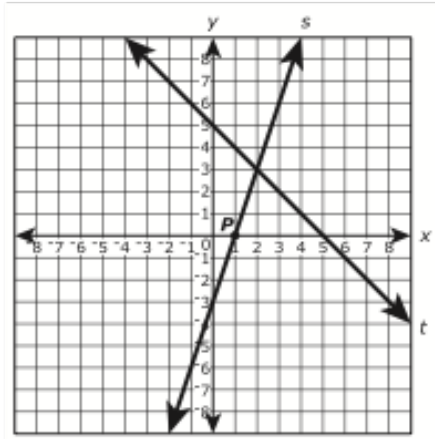
The equations of lines s and t form a system of equations. The solution to the system of equations is located at point P .

Which graph correctly shows line s , line t , and point P ?

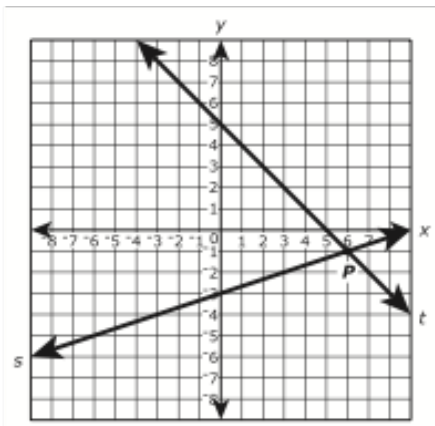
A.



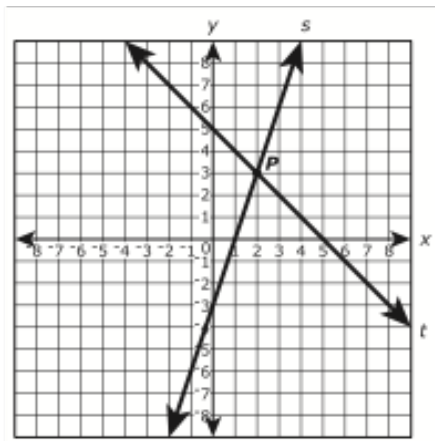
B.



C.

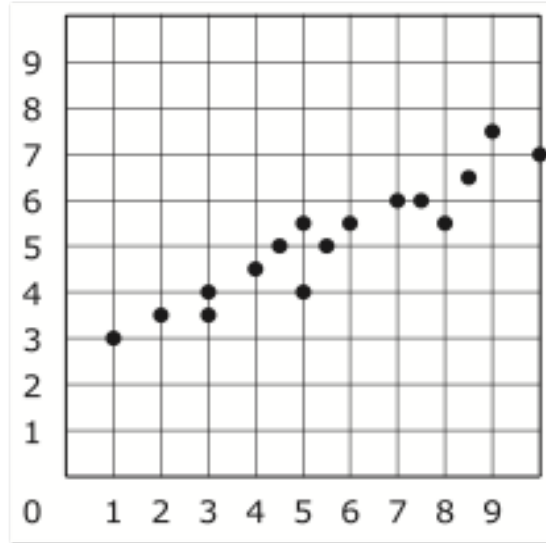


D.

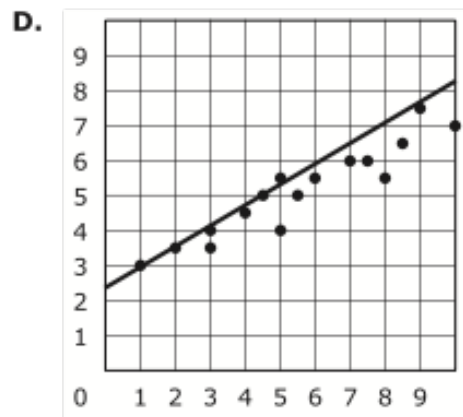
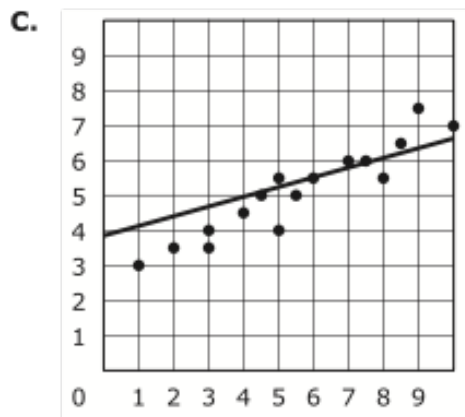
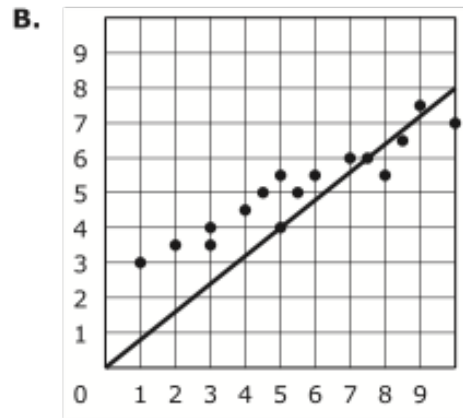
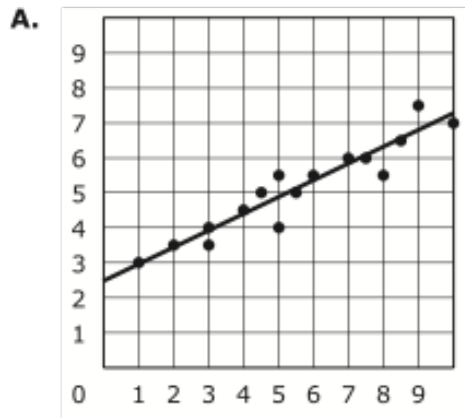


8th Grade PARCC Unit 1 Practice Test Item #16 (Non- Calculator): Standard 8.SP.2

16. A scatter plot is shown on the coordinate plane.



Which of these **most closely** approximates a line of best fit for the data in the scatter plot?



8th Grade PARCC Unit 1 Practice Test Item #17 (Non- Calculator): Standard 8.EE.3

- 17.** The body of a 154-pound person contains approximately 2×10^{-1} milligrams of gold and 6×10^1 milligrams of aluminum. Based on this information, the number of milligrams of aluminum in the body is how many times the number of milligrams of gold in the body?

Enter your answer in the box.

8th Grade PARCC Unit 1 COMPUTER-BASED Practice Test Item #1 (Non- Calculator):

Standard 8.F.1-1

A partially filled input-output table is shown. Complete the table so that it represents a function.

Drag and drop each number from the list into the correct Input or Output box.

-

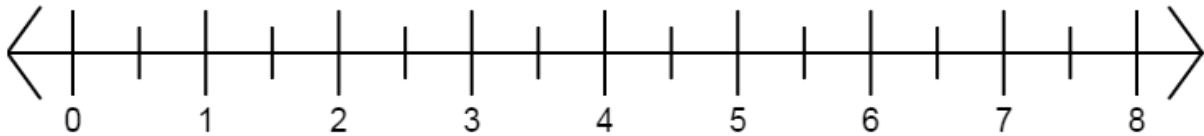
Input	Output
1	4
<input type="text"/>	6
5	<input type="text"/>
<input type="text"/>	<input type="text"/>

8th Grade PARCC Unit 1 COMPUTER-BASED Practice Test #4 (Non- Calculator):

Standard 8.NS.2

Select the point on the number line that **best** approximates the location of $\sqrt{14}$.

Select a place on the number line to plot the point.

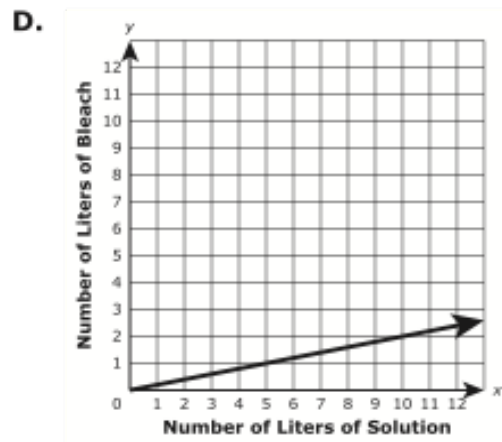
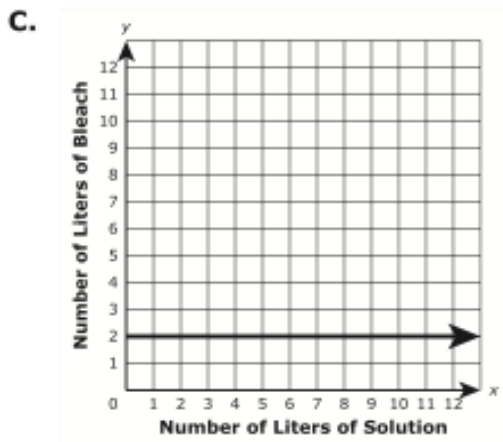
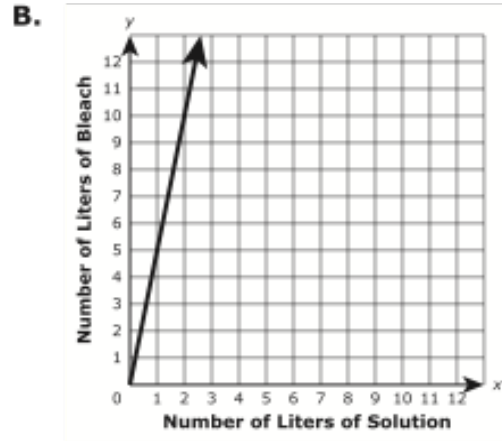
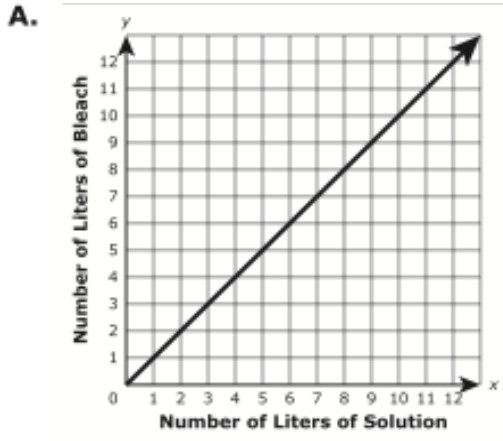




8th Grade PARCC Unit 2 Practice Test Item #18 (Calculator): Standard 8.EE.5-1

18. A solution is 20% bleach.

Which graph represents the number of liters of bleach, y , contained in x liters of solution?





8th Grade PARCC Unit 2 Practice Test Item #19 (Calculator): Standard 8.EE.C.Int.1

Use the information provided to answer Part A and Part B for question 19.

Filipo is building a rectangular sandbox for his younger brother. The length of the sandbox is 1 foot longer than twice the width of the sandbox. The perimeter of the sandbox is 29 feet.

19. Part A

Which equation could be used to determine w , the width, in feet, of the sandbox?

- A. $w + w + 2 = 29$
- B. $w + 2w + 1 = 29$
- C. $2w + 2(w + 2) = 29$
- D. $2w + 2(2w + 1) = 29$

Part B

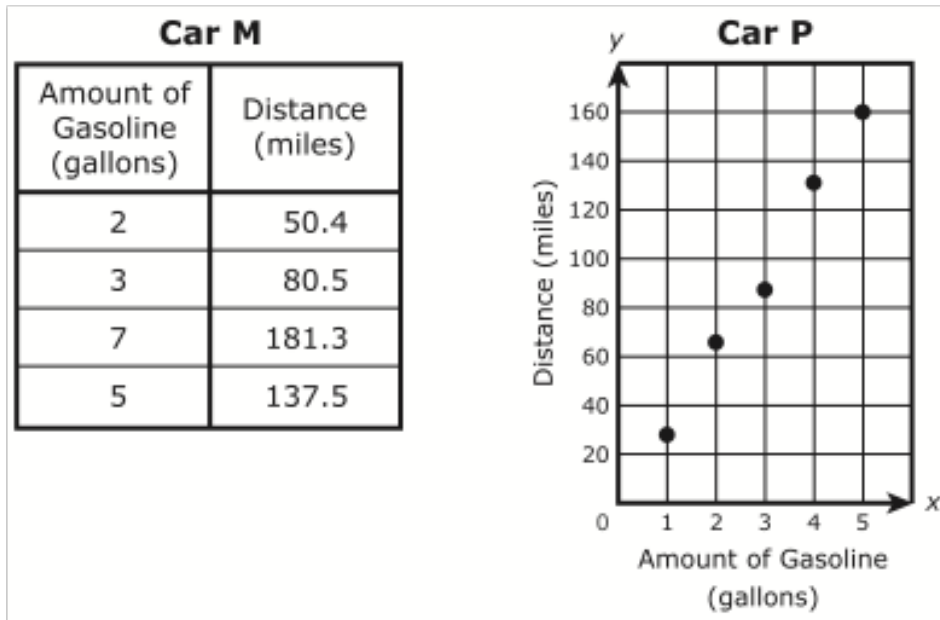
What is the width, in feet, of the sandbox?

Enter your answer in the box.



8th Grade PARCC Unit 2 Practice Test Item #20 (Calculator): Standards 8.D.3, 8.EE.5

20. The gasoline mileage for two cars can be compared by finding the distance each car traveled and the amount of gasoline used. The table shows the distance that car M traveled using x gallons of gasoline. The graph shows the distance, y , that car P traveled using x gallons of gasoline.



Based on the information in the table and the graph, compare the approximate miles per gallon of car M to car P. Show your work or explain your answer.

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



8th Grade PARCC Unit 2 Practice Test Item #21 (Calculator): Standard 8.F.2

- 21.** Function A and Function B are linear functions. Function A is represented by the table of values. Function B is represented by the equation.

Function A		Function B
x	y	$y = 3x + 4$
1	2	
3	10	
4	14	
7	26	

Which statements about the properties of Function A and Function B are true?

Select **each** correct statement.

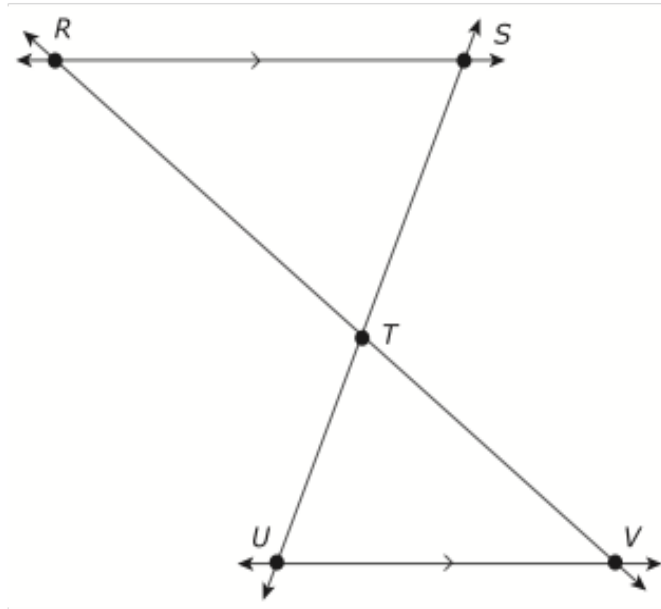
- A.** The y -intercept of Function A is equal to the y -intercept of Function B.
- B.** The y -intercept of Function A is less than the y -intercept of Function B.
- C.** The y -intercept of Function A is greater than the y -intercept of Function B.
- D.** The rate of change of Function A is equal to the rate of change of Function B.
- E.** The rate of change of Function A is less than the rate of change of Function B.
- F.** The rate of change of Function A is greater than the rate of change of Function B.



8th Grade PARCC Unit 2 Practice Test Item #22 (Calculator): Standards 8.C.3.3, 8.G.5

Use the information provided to answer Part A and Part B for question 22.

The figure shows line RS parallel to line UV . The lines are intersected by 2 transversals. All lines are in the same plane.



22. Part A

Explain why triangle RTS is similar to triangle VTU .

Enter your explanation in the space provided.

Part B

Given that $m\angle STV = 108^\circ$, determine $m\angle SRT + m\angle TUV$. Show your work or explain your answer.

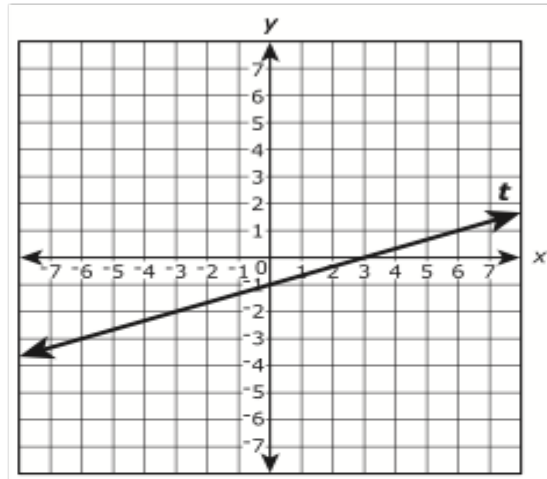
Enter your answer and your work or explanation in the space provided.



8th Grade PARCC Unit 2 Practice Test Item #23 (Calculator): Standard 8.F.4

Use the information provided to answer Part A through Part D for question 23.

Line t is shown in the coordinate plane.



23. Part A

What is the slope of line t ?

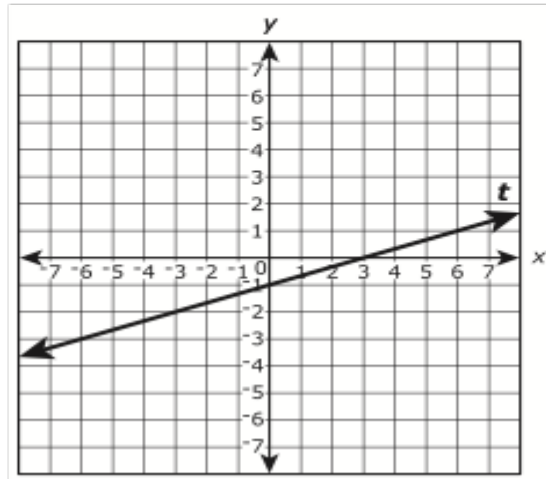
- A. 3
- B. $\frac{1}{3}$
- C. $-\frac{1}{3}$
- D. -3



8th Grade PARCC Unit 2 Practice Test Item #23 (Calculator): Standard 8.F.4 (continued)

Use the information provided to answer Part A through Part D for question 23.

Line t is shown in the coordinate plane.



Part B

What is the y-intercept of line t ?

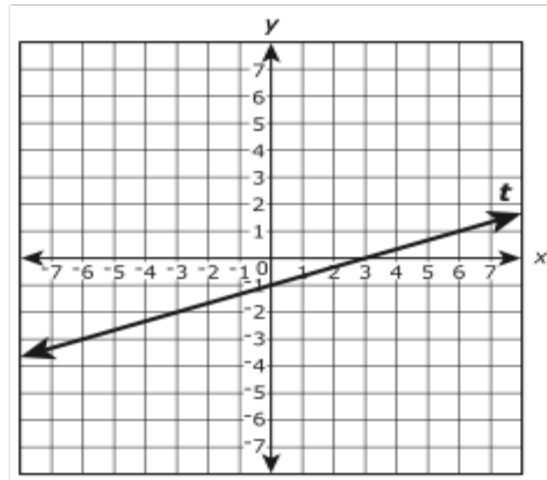
- A. -1
- B. $-\frac{1}{3}$
- C. $\frac{1}{3}$
- D. 3



8th Grade PARCC Unit 2 Practice Test Item #23 (Calculator): Standard 8.F.4 (continued)

Use the information provided to answer Part A through Part D for question 23.

Line t is shown in the coordinate plane.



Part C

Line s (not shown) has the same slope and passes through the point $(0, 4)$.

Which table represents 4 points on line s ?

A.

x	y
-6	2
-3	3
0	4
3	5

B.

x	y
-6	-14
-3	-5
0	4
3	13

C.

x	y
-6	6
-3	5
0	4
3	3

D.

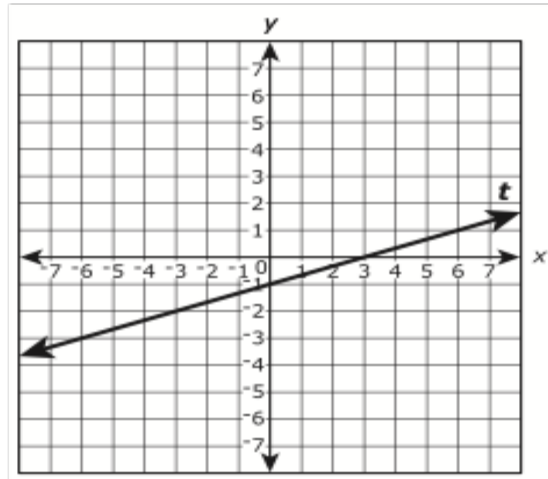
x	y
-6	22
-3	13
0	4
3	-5



8th Grade PARCC Unit 2 Practice Test Item #23 (Calculator): Standard 8.F.4 (continued)

Use the information provided to answer Part A through Part D for question 23.

Line t is shown in the coordinate plane.



Part D

Which equation could represent line s ?

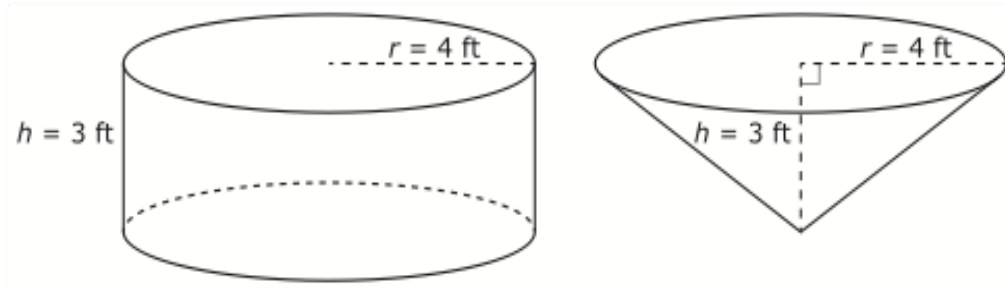
- A. $y = -\frac{1}{3}x + 4$
- B. $y = -3x + 4$
- C. $y = 3x + 4$
- D. $y = \frac{1}{3}x + 4$



8th Grade PARCC Unit 2 Practice Test Item #24 (Calculator): Standard 8.G.9

Use the information provided to answer Part A and Part B for question 24.

The figure shows a right-circular cylinder and a right-circular cone. The cylinder and the cone have the same base and the same height.



24. Part A

What is the volume, in cubic feet, of the cone?

- A. 12π
- B. 16π
- C. 36π
- D. 48π

Part B

What is the ratio of the cone's volume to the cylinder's volume?

- A. $\frac{1}{1}$
- B. $\frac{1}{2}$
- C. $\frac{1}{3}$
- D. $\frac{1}{4}$



8th Grade PARCC Unit 2 Practice Test Item #25 (Calculator): Standards 8.C.6, 7.EE.1

Use the information provided to answer Part A through Part C for question 25.

Martin is considering the expressions $\frac{1}{2}(7x + 48)$ and $-\left(\frac{1}{2}x - 3\right) + 4(x + 5)$. He wants to know if one expression is greater than the other for all values of x .

25. Part A

Which statement about the relationship between the expressions is true?

- A. The value of the expression $\frac{1}{2}(7x + 48)$ is always equal to the value of the expression $-\left(\frac{1}{2}x - 3\right) + 4(x + 5)$.
- B. The value of the expression $\frac{1}{2}(7x + 48)$ is always less than the value of the expression $-\left(\frac{1}{2}x - 3\right) + 4(x + 5)$.
- C. The value of the expression $\frac{1}{2}(7x + 48)$ is always greater than the value of the expression $-\left(\frac{1}{2}x - 3\right) + 4(x + 5)$.
- D. The value of the expression $\frac{1}{2}(7x + 48)$ is sometimes greater than and sometimes less than the value of the expression $-\left(\frac{1}{2}x - 3\right) + 4(x + 5)$.

Part B

Show or explain how you found your answer to Part A.

Enter your work or your explanation in the space provided.

Part C

Write a new expression that always has a greater value than both of these expressions.

Enter your expression in the space provided.



8th Grade PARCC Unit 2 Practice Test Item #26 (Calculator): Standard 8.SP.4

26. The table shows the results of a random survey of students in grade 7 and grade 8. Every student surveyed gave a response. Each student was asked if he or she exercised less than 5 hours last week or 5 or more hours last week.

	Less than 5 Hours	5 or More Hours
Grade 7 Students	49	63
Grade 8 Students	58	51

Based on the results of the survey, which statements are true?

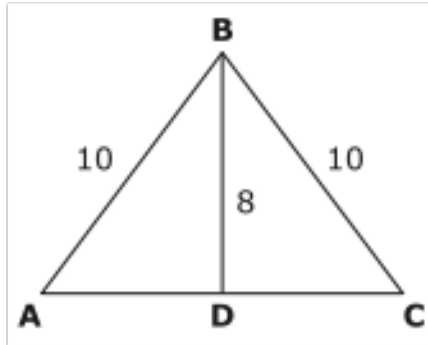
Select **each** correct statement.

- A. More grade 8 students were surveyed than grade 7 students.
- B. A total of 221 students were surveyed.
- C. Less than 50% of the grade 8 students surveyed exercised 5 or more hours last week.
- D. More than 50% of the students surveyed exercised less than 5 hours last week.
- E. A total of 107 grade 7 students were surveyed.



8th Grade PARCC Unit 2 Practice Test Item #27 (Calculator): Standard 8.G.7-1

27. In $\triangle ABC$, \overline{BD} is perpendicular to \overline{AC} . The dimensions are shown in centimeters.



What is the length, in centimeters, of \overline{AC} ?

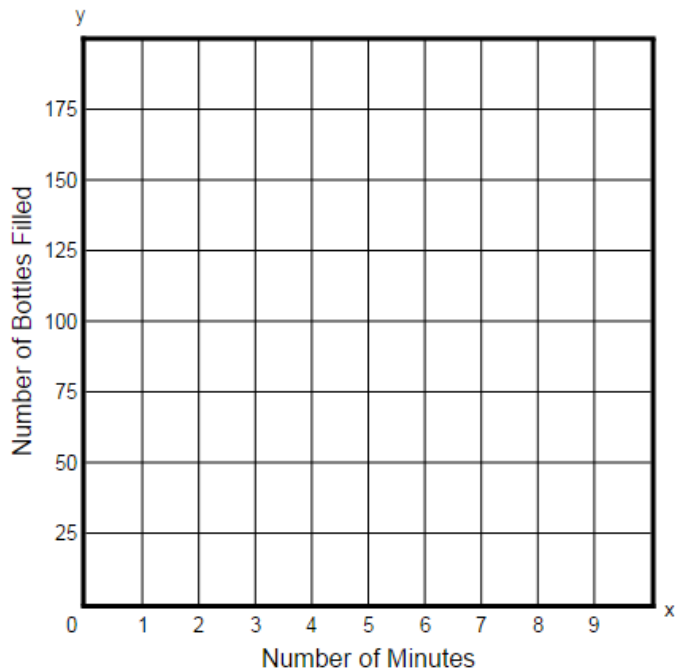
Enter your answer in the box.



8th Grade PARCC Unit 2 COMPUTER-BASED Practice Test Item #1 (Calculator): Standard 8.EE.5-1

The number of bottles a machine fills is proportional to the number of minutes the machine operates. The machine fills 250 bottles every 20 minutes. Create a graph that shows the number of bottles, y , the machine fills in x minutes.

To graph a line, select two points on the coordinate plane. A line will be drawn through the points.

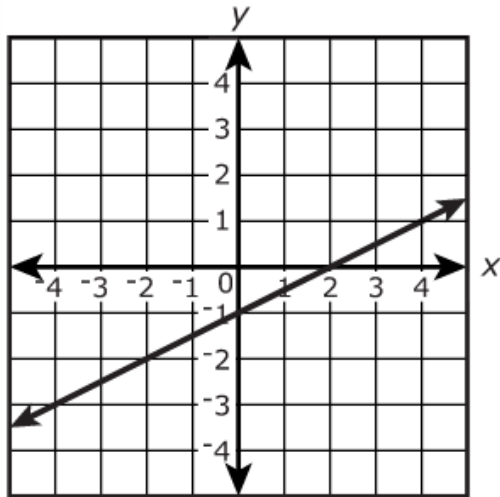




8th Grade PARCC Unit 2 COMPUTER-BASED Practice Test Item #4 (Calculator): Standard 8.F.2

Functions W and Z are both linear functions of x .

Function W



Function Z

x	y
-2	-2.5
0	-2
2	-1.5
4	-1

- F. The y -value when $x = -4$ for Function W is equal to the y -value when $x = -4$ for Function Z.



8th Grade PARCC Unit 2 COMPUTER-BASED Practice Test Item #6 (Calculator): Standard 8.F.4

A pool cleaning service drained a full pool. The table shows the number of hours it drained and the amount of water remaining in the pool at that time.

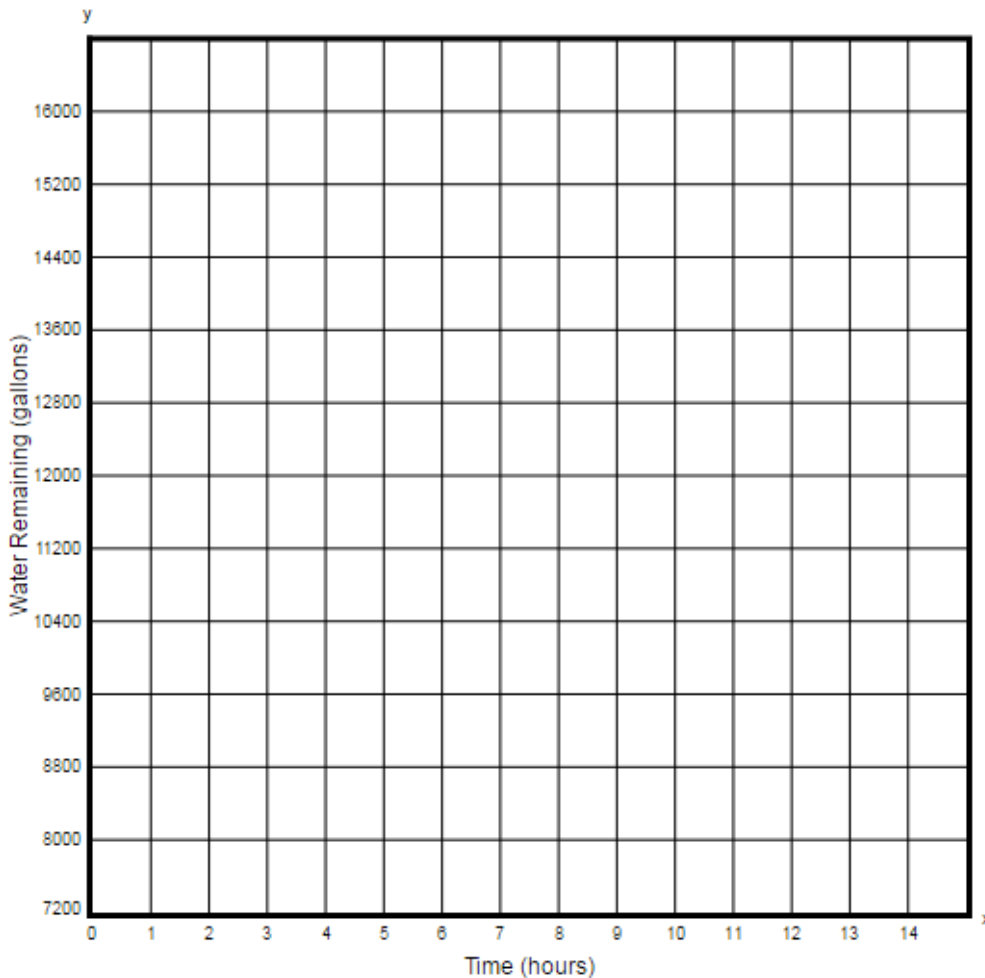
Pool Draining

Time (hours)	3	5	7	9	11
Water Remaining (gallons)	13,200	12,000	10,800	9,600	8,400

Part A

Plot the points that show the relationship between the number of hours elapsed and the number of gallons of water left in the pool.

Select a place on the grid to plot each point.





8th Grade PARCC Unit 2 COMPUTER-BASED Practice Test Item #6 (Calculator): Standard 8.F.4
(continued)

Part B

The data suggest a linear relationship between the number of hours the pool had been draining and the number of gallons of water remaining in the pool. Assuming the relationship is linear, what does the rate of change represent in the context of this relationship?

- A. the number of gallons of water in the pool after 1 hour
- B. the number of hours it took to drain 1 gallon of water
- C. the number of gallons drained each hour
- D. the number of gallons of water in the pool when it is full

Part C

What does the y -intercept of the linear function represent in the context of this relationship?

- A. the number of gallons of water in the pool after 1 hour
- B. the number of hours it took to drain 1 gallon of water
- C. the number of gallons drained each hour
- D. the number of gallons of water in the pool when it is full

Part D

Which equation describes the relationship between the time elapsed and the number of gallons of water remaining in the pool?

- A. $y = -600x + 15,000$
- B. $y = -600x + 13,200$
- C. $y = -1,200x + 13,200$
- D. $y = -1,200x + 15,000$



8th Grade PARCC Unit 3 Practice Test Item #28 (Calculator): Standard 8.EE.5-2

28. Relationship A is defined by the equation $y = 9x$.

Some values of relationship B are shown in the table.

Relationship B

x	y
0	0
3	34.5
5	57.5
8	92

Both relationships represent a direct proportion between x and y . The rate of change of relationship B is how many units greater than the rate of change of relationship A?

- A. 1.5
- B. 2.5
- C. 25.5
- D. 43.5

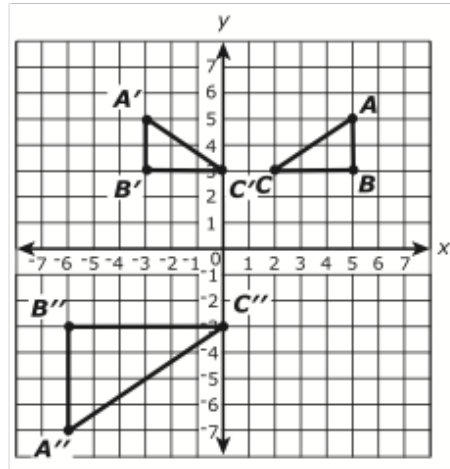


8th Grade PARCC Unit 3 Practice Test Item #29 (Calculator): Standards 8.C.5, 8.G.2, 8.G.4

Use the information provided to answer Part A and Part B for question 29.

In the coordinate plane shown, triangle ABC is congruent to triangle $A'B'C'$.

Triangle $A'B'C'$ is similar to triangle $A''B''C''$.



29. Part A

Describe a single transformation that shows that triangle $A'B'C'$ is congruent to triangle ABC . Include all the necessary information to complete the transformation.

Enter your description in the space provided.

Part B

Describe a sequence of transformations that shows that triangle $A''B''C''$ is similar to triangle $A'B'C'$. Include all the necessary information to complete each transformation.

Enter your description in the space provided.



8th Grade PARCC Unit 3 Practice Test Item #30 (Calculator): Standard 8.SP.3

Use the information provided to answer Part A and Part B for question 30.

Eric planted a seedling in his garden and recorded its height each week. The equation shown can be used to estimate the height, h , in inches, of the seedling by the end of each week, w , after it was planted.

30. Part A

What does the slope of the graph of the equation $h = \frac{3}{4}w + \frac{9}{4}$ represent?

- A. the height, in inches, of the seedling after w weeks
- B. the height, in inches, of the seedling when Eric first planted it
- C. the increase in the height, in inches, of the seedling each week
- D. the total increase in the height, in inches, of the seedling after w weeks

Part B

The equation $h = \frac{3}{4}w + \frac{9}{4}$ estimates the height of the seedling to be 8.25 inches after how many weeks?

Enter your answer in the box.



8th Grade PARCC Unit 3 Practice Test Item #31 (Calculator): Standards 8.D.1, 8.EE.5

- 31.** Two utility companies sell electricity in units of kilowatt-hours. The cost of electricity for company P is shown in the table. The cost of electricity for company M can be found by using the equation shown, where y represents the total cost in dollars for x kilowatt-hours of electricity.

Company P		Company M
Number of Kilowatt-hours	Total Cost (dollars)	$y = 0.15x$
1,250	150.00	
1,650	198.00	

- Use the information provided to find the unit rate, in dollars per kilowatt-hour, for each company. Show your work or explain your answers.
- Find the total cost, in dollars, of buying 2,375 kilowatt-hours of electricity from the **least** expensive company.

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



8th Grade PARCC Unit 3 Practice Test Item #32 (Calculator): Standards 8.C.1.2, 8.EE.8

Use the information provided to answer Part A and Part B for question 32.

In a system of two linear equations, the lines represented by each equation have the same slope.

32. Part A

Which could be the total number of solutions to the system of equations?

Select **each** correct answer.

- A. no solutions
- B. 1 solution
- C. 2 solutions
- D. 3 solutions
- E. infinitely many solutions

Part B

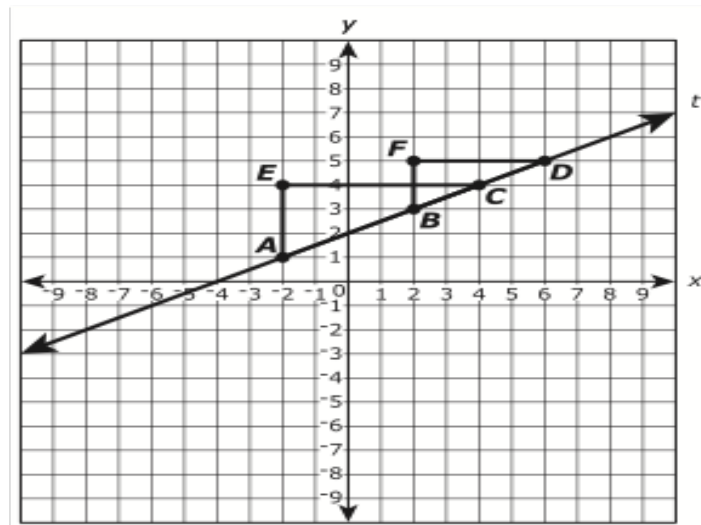
Explain why you chose your answer(s) in Part A.

Enter your explanation for each selection in the space provided.



8th Grade PARCC Unit 3 Practice Test Item #33 (Calculator): Standards 8.EE.6-1

33. Line t and $\triangle ECA$ and $\triangle FDB$ are shown on the coordinate plane.



Which statements are true?

Select **all** that apply.

- A. The slope of \overline{AC} is equal to the slope of \overline{BC} .
- B. The slope of \overline{AC} is equal to the slope of \overline{BD} .
- C. The slope of \overline{AC} is equal to the slope of line t .
- D. The slope of line t is equal to $\frac{EC}{AE}$.
- E. The slope of line t is equal to $\frac{FB}{FD}$.
- F. The slope of line t is equal to $\frac{AE}{FD}$.



8th Grade PARCC Unit 3 Practice Test Item #34 (Calculator): Standards 8.D.2, 7.RP.3, 7.EE.3

Use the information provided to answer Part A and Part B for question 34.

The owner of a computer store is offering a discount on a computer sold in the store.

Computer Sale!

Original Price: \$598.00
25% off original price

8% tax applied after discount

34. Part A

The owner offers a payment plan where the total cost of the computer is paid in 6 equal monthly payments.

- Determine the amount of each monthly payment.
- Show your work or explain your answer.

Enter the monthly payment and your work or explanation in the space provided.

Part B

A different computer is advertised as 40% off of the original price. After the discount, the tax is \$44.64.

- Determine the total price of this computer after the discount and tax are applied.
- Show your work or explain your answer.
- Determine the original price of this computer.
- Show your work or explain your answer.

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



8th Grade PARCC Unit 3 Practice Test Item #35 (Calculator): Standard 8.EE.8c

Use the information provided to answer Part A through Part D for question 35.

A chemist has two acid solutions. Solution A contains 10% acid, and solution B contains 30% acid. He will mix the two solutions to make 10 liters of a third solution, solution C, containing 25% acid.

The system of equations shown can be used to represent this situation.

$$\begin{cases} x + y = 10 \\ 0.10x + 0.30y = 2.5 \end{cases}$$

35. Part A

Which statement about the system of equations is true?

- A. In the system of equations, x represents the number of liters of acid in solution A, and y represents the number of liters of acid in solution B.
- B. In the system of equations, x represents the number of liters of acid in solution B, and y represents the number of liters of acid in solution A.
- C. In the system of equations, x represents the number of liters of solution A in solution C, and y represents the number of liters of solution B in solution C.
- D. In the system of equations, x represents the number of liters of solution B in solution C, and y represents the number of liters of solution A in solution C.

Part B

What does the expression $0.30y$ represent?

- A. the number of liters of acid in solution C that come from solution A
- B. the number of liters of acid in solution C that come from solution B
- C. the number of liters of solution A in solution C
- D. the number of liters of solution B in solution C



8th Grade PARCC Unit 3 Practice Test Item #35 (Calculator): Standard 8.EE.8c
(continued)

Use the information provided to answer Part A through Part D for question 35.

A chemist has two acid solutions. Solution A contains 10% acid, and solution B contains 30% acid. He will mix the two solutions to make 10 liters of a third solution, solution C, containing 25% acid.

The system of equations shown can be used to represent this situation.

$$\begin{cases} x + y = 10 \\ 0.10x + 0.30y = 2.5 \end{cases}$$

Part C

If the system of equations is graphed in a coordinate plane, what is the x -coordinate of the intersection of the two lines?

Enter your answer in the box.

Part D

What is the number of liters of solution B the chemist mixes with solution A to create solution C containing 25% acid?

Enter your answer in the box.



8th Grade PARCC Unit 3 Practice Test Item #36 (Calculator): Standard 8.F.2

- 36.** Function A is a linear function. Some values of Function A are shown in the table.

Function A

x	y
-1	-5
3	3
5	7
6	9

Function B is a linear function with a y -intercept of 3 and an x -intercept of -5 .

Which statement is true?

- A.** The slope of Function A is greater than the slope of Function B, and the y -intercept of Function A is greater than the y -intercept of Function B.
- B.** The slope of Function A is less than the slope of Function B, and the y -intercept of Function A is greater than the y -intercept of Function B.
- C.** The slope of Function A is greater than the slope of Function B, and the y -intercept of Function A is less than the y -intercept of Function B.
- D.** The slope of Function A is less than the slope of Function B, and the y -intercept of Function A is less than the y -intercept of Function B.



8th Grade PARCC Unit 3 COMPUTER-BASED Practice Test Item #8 (Calculator): Standard 8.EE.8c

A school is selling T-shirts and sweatshirts for a fund-raiser. The table shows the number of T-shirts and the number of sweatshirts in each of three recent orders. The total cost of orders A and B are given. Each T-shirt has the same cost, and each sweatshirt has the same cost.

Order	Number of T-shirts	Number of Sweatshirts	Total Cost of Order (dollars)
A	2	2	38
B	3	1	35
C	1	2	?

The system of equations shown can be used to represent this situation.

$$\begin{cases} 2x + 2y = 38 \\ 3x + y = 35 \end{cases}$$

Part A

What is the total cost of 1 T-shirt and 1 sweatshirt?

Enter your answer in the box.

\$

Part B

Select a choice from each drop-down menu to correctly complete the statement.

In the system of equations, x represents

Choose... ▼
the number of T-shirts in the order
the number of sweatshirts in the order
the cost, in dollars, of each T-shirt
the cost, in dollars, of each sweatshirt

and y represents

Choose... ▼
the number of T-shirts in the order
the number of sweatshirts in the order
the cost, in dollars, of each T-shirt
the cost, in dollars, of each sweatshirt



**8th Grade PARCC Unit 3 COMPUTER-BASED Practice Test Item #8 (Calculator):
Standard 8.EE.8c (continued)**

Part C

If the system of equations is graphed in a coordinate plane, what are the coordinates (x, y) of the intersection of the two lines?

(,)

Part D

What is the total cost, in dollars, of order C?

\$



8th Grade PARCC Unit 3 COMPUTER-BASED E Practice Test Item #9 (Calculator): Standard 8.F.2

Functions A, B, and C are linear functions.

Some values of Function A are shown in the table.

Function A

x	y
3	3
5	7
6	9

The graph of Function B has a y-intercept of $(0, 3)$ and an x-intercept of $(-5, 0)$.

Function C is defined by the equation $y = (3x + 1)$.

Order the linear functions based on rate of change, from least to greatest.

Least Rate of Change

Greatest Rate of Change

Function A

Function B

Function C