PARCC

Partnership for Assessment of Readiness for College and Careers

Math
Spring Operational 2015

Grade 7
Performance Based Assessment
Released Items

1. The table shows the cost of downloading songs from a Web site.

Cost of Songs

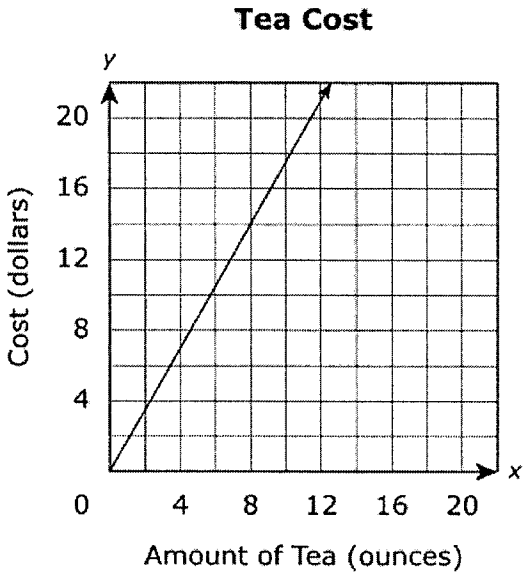
Number of Songs	Total Cost
3	$3.21
5	$5.35
8	$8.56

At this rate, what is the cost per song?

Enter your answer in the box.

$ [ ] per song

2. The relationship between the number of ounces of tea purchased and the total cost of the tea is proportional, as shown in this graph.



Which equation models this relationship?

- A. $y = \frac{1}{4}x$
- B. $y = \frac{4}{1}x$
- C. $y = \frac{4}{7}x$
- D. $y = \frac{7}{4}x$

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3. The table below represents a relationship between the time a turtle walks and the distance the turtle travels.

Time and Distance Turtle Walks

Time (minutes)	Distance (feet)
5	120
20	480
30	720
50	1,200

What is the unit rate represented in this table?

Enter your answer in the box.

[ ] feet per minute

4. Which expressions are equivalent to the expression $(x - y)\,\frac{5}{8} - \frac{1}{4}\,x + y$?

Select **each** correct answer.

- ☐ A. $\frac{3}{8}\,x + \frac{3}{8}\,y$
- ☐ B. $\frac{3}{8}\,x + 1\,\frac{5}{8}\,y$
- ☐ C. $\frac{5}{8}\,x - y - \frac{1}{4}\,x + y$
- ☐ D. $\frac{5}{8}\,x - \frac{5}{8}\,y - \frac{1}{4}\,x + y$
- ☐ E. $\frac{5}{8}\,x - \frac{1}{4}\,x + y - \frac{5}{8}\,y$

5. A scuba diver standing on a boat is at an altitude of 1.3 meters above sea level. The scuba diver jumps into the water and decreases his altitude by 5.6 meters in one minute.

   Which equation can be used to determine the scuba diver's altitude, in meters relative to sea level, one minute after jumping into the water?

   A. $1.3 + 5.6 = 6.9$

   B. $-1.3 + 5.6 = 4.3$

   C. $1.3 + (-5.6) = -4.3$

   D. $-1.3 + (-5.6) = -6.9$

6. An ice cream shop uses a mix of blueberries and cherries on its ice cream sundaes. The shop has $5\frac{3}{4}$ pounds of blueberries and $4\frac{1}{2}$ pounds of cherries. The shop mixes the blueberries and cherries and uses $\frac{1}{16}$ pound of the mix on each sundae. Which expression represents the total number of sundaes that the shop can make using all of the blueberries and cherries?

   A. $\left(5\frac{3}{4} \div \frac{1}{16}\right) + 4\frac{1}{2}$

   B. $5\frac{3}{4} + \left(4\frac{1}{2} \div \frac{1}{16}\right)$

   C. $\frac{1}{16} \div \left(5\frac{3}{4} + 4\frac{1}{2}\right)$

   D. $\left(5\frac{3}{4} + 4\frac{1}{2}\right) \div \frac{1}{16}$

7. A drawbridge rises at a constant rate. It takes $1\frac{1}{2}$ minutes for the drawbridge to rise $\frac{6}{20}$ of its total height. How much time, in minutes, does it take for the drawbridge to reach its total height?

- A. $\frac{1}{5}$
- B. $\frac{9}{20}$
- C. $\frac{20}{9}$
- D. 5

8. Which table shows a proportional relationship between x and y?

A.

x	y
1	0
2	3
3	6

B.

x	y
1	1
2	3
3	5

C.

x	y
1	2
2	4
3	6

D.

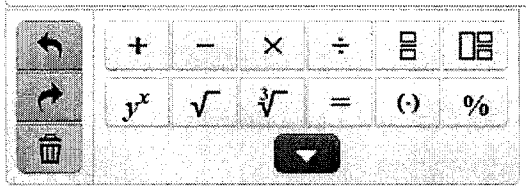
x	y
1	3
2	5
3	7

9. In a game, a player earns 100 points for each question answered correctly and earns −30 points for each question answered incorrectly. A player answered 14 questions correctly and 6 questions incorrectly. Write a numeric expression to represent the total number of points the player earned. What is the total number of points the player earned?

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

Numeric Expression: ☐

Total number of points the player earned: ☐



10. Giovanni spent a total of $13.75 bowling. He rented bowling shoes for $2.50 and bowled 3 games. Each game cost the same amount.

Part A

Create an equation that can be used to determine g, the cost in dollars of each bowling game.

Drag and drop the appropriate number or operation into the correct box.

2.50	3	7.50	11.25	13.75	+	−	×	÷

☐ g ☐ ☐ = ☐

Part B

Use the equation you created to determine the cost of each bowling game.

Enter your answer in the box.

$ ☐

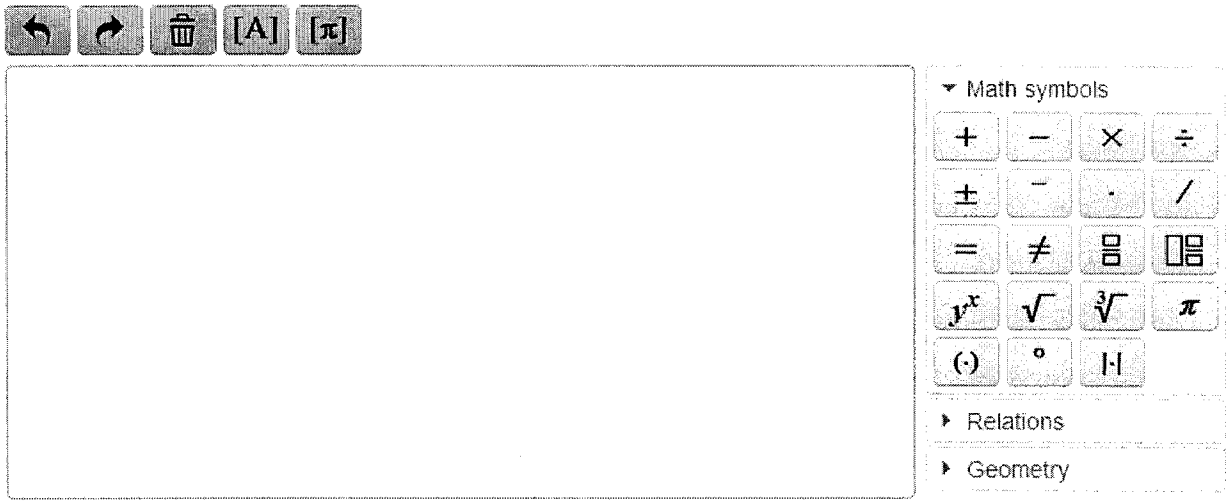
11. Rita gets paid $16 per hour for the first 8 hours she works each day. She earns $1\frac{1}{2}$ times her hourly pay rate for time she works over 8 hours each day. Rita's work day for Monday is described in the list.

- worked from 8:15 a.m. to 12:45 p.m.
- took a 45-minute lunch break
- worked until 6:15 p.m.

Rita does not get paid for her lunch break.

How much money did Rita earn for the time she worked on Monday? Show or explain all of the steps you used to determine your answer.

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



12. Matt and his friends paid $30 for 4 sandwiches and 4 bottles of water.

- Each sandwich cost the same amount.
- The bottles of water cost $2 each.

The equation $4(x+2)=30$ can be used to determine x, the cost of each sandwich.

Matt solved the equation using the following steps:

$4(x+2)=30$
$4x+2=30$
$4x=28$
$x=7$

Therefore, Matt calculates the cost of each sandwich as $7. Did Matt solve the equation correctly?

- If he did, justify each step of Matt's solution using mathematical properties.
- If he did not, describe any error Matt made in his calculation and determine the price of each sandwich. Justify each step you used to come to your conclusion.

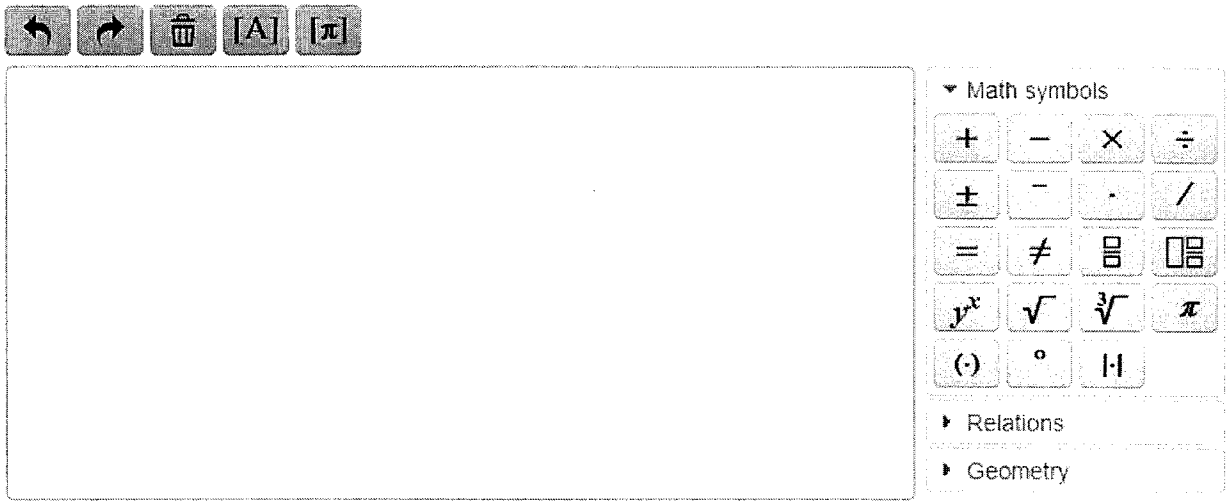
Enter your answers and your justifications in the space provided.

13. A student usually saves $20 a month. He would like to reach a goal of saving $350 in 12 months. The student writes the equation $350 = 12(x + 20)$ to represent this situation.

Solve the equation for *x*.

- Show your work or explain your answer.
- Write your answer as a sentence that describes what the variable *x* represents.

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



14. The table represents a proportional relationship.

x	y
6	7.5
8	10.0
10	12.5

A student states that the constant of proportionality is 2.5 since $10 - 7.5 = 2.5$.

- Explain why the student's reasoning is incorrect.
- Find the correct constant of proportionality. Show your work or explain your answer.

Enter your explanations, your answer, and your work in the space provided.

15. Abby squeezed the juice from 4 oranges and made 1 cup of orange juice. Each orange provides the same amount of juice.

Part A

Write an equation that can be used to determine the numbers of cups of orange juice, y, that can be made by squeezing the juice from x oranges.

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

Part B

Complete this table of values to show the relationship between the numbers of cups of orange juice that are made by squeezing the juice from different numbers of oranges.

Orange Juice

Number of Oranges	Number of Cups of Juice
4	1
5	?
?	6

Enter your answers in the boxes.

5 oranges = [ ] cups of juice.

[ ] oranges = 6 cups of juice.

Part C

Show or explain all the steps you used to complete the table.

Enter your work or explanation in the space provided.

Math symbols

Relations

Geometry

Part D

Abby buys bags containing 10 oranges each. She wants to squeeze the juice from enough oranges to make $\frac{1}{2}$ gallon of orange juice. Abby cannot buy partial bags of oranges.

How many bags of 10 oranges will Abby need to buy to make $\frac{1}{2}$ gallon of orange juice?

Show or explain all the steps you used to determine your answer.

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

Math symbols

Relations

Geometry

16. The coordinates of a quadrilateral are shown:

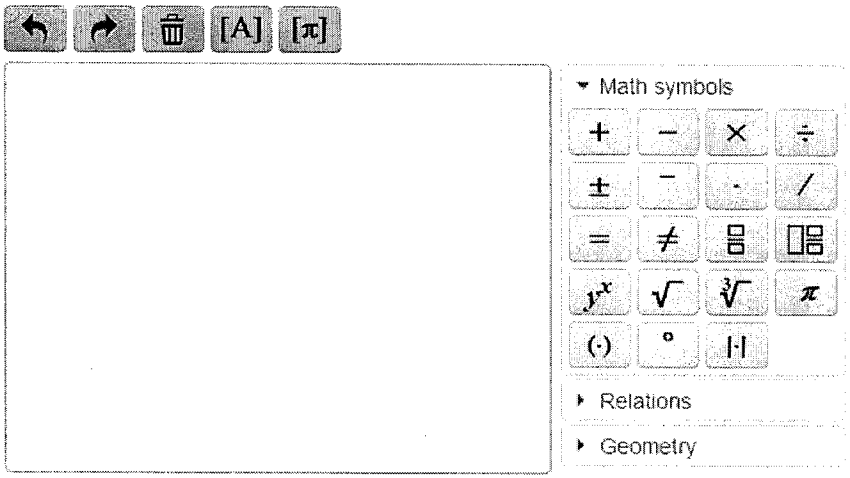
- point $J\ (-4.5, 3)$
- point $K\ (-1.2, 3)$
- point $L\ (-1.2, 8.7)$
- point $M\ (-4.5, 8.7)$

Brenda claims that quadrilateral $JKLM$ is a square.

Part A

Show or explain why Brenda is not correct.

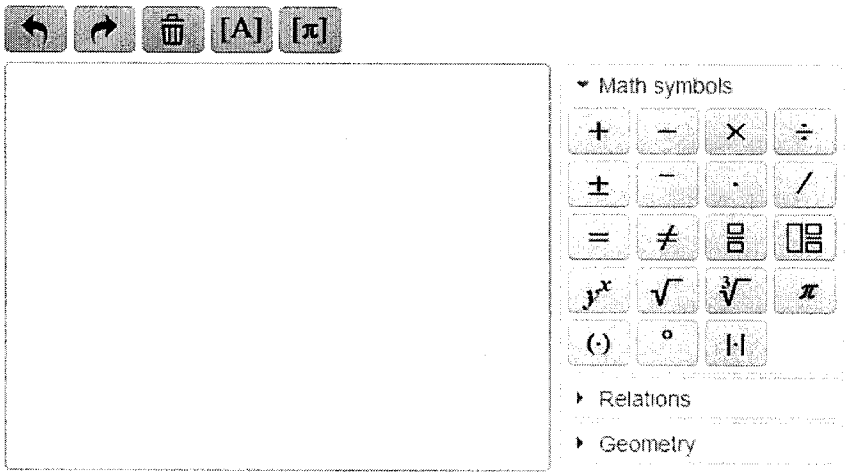
Enter your work or explanation in the space provided.



Part B

Select new coordinates for point L and point M so that quadrilateral $JKLM$ is a square. Show or explain all of the steps you used to determine the new locations of the two points.

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



17. The attendance for the last 4 years at a county fair is shown in the table.

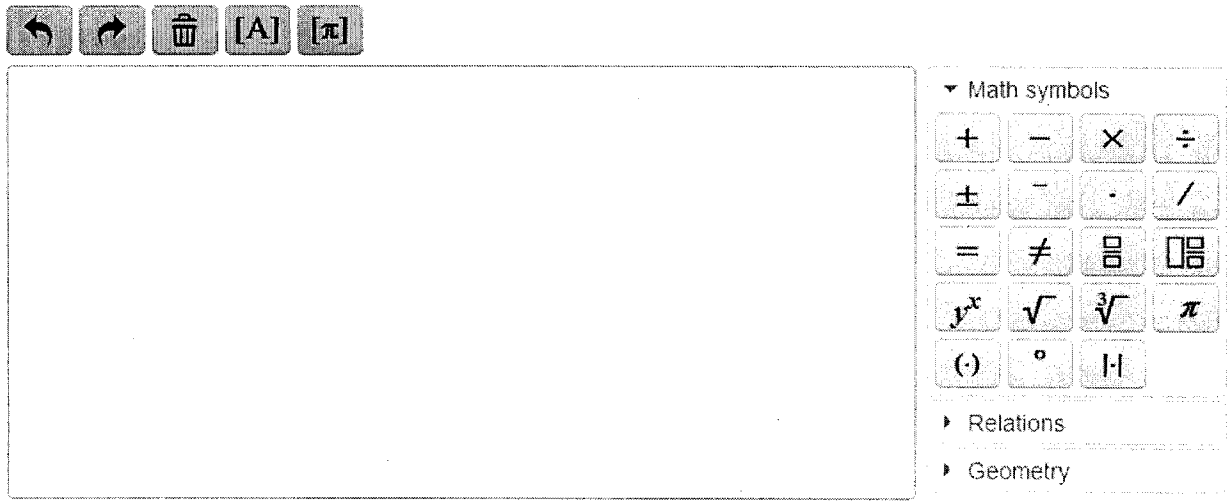
County Fair Attendance

Year	Attendance
1	9,278
2	10,365
3	12,128
4	13,304

This year, the first 20% of people attending the fair will receive a raffle ticket. Of the people who receive raffle tickets, $\frac{1}{3}$ will receive a small prize.

- Based on the data in the table, determine a reasonable estimate of the number of people who will attend this year's fair. Explain how you found your estimate.
- Use your estimate to find the approximate number of people who will receive a small prize at this year's fair.
- Show your work or provide an explanation of how you found the approximate number of people who will receive a small prize at this year's fair.

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



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