

Ready® Mathematics**Unit 3 Unit Assessment****Form A****Solve the problems.**

- 1** Consider the slopes and y-intercepts of each system of equations. Choose *True* or *False* for each statement.

- a. $y = \frac{3}{4}x + 6$ and $y = -\frac{3}{4}x + 5$ has only one solution. True False
- b. $y - 5 = 4x$ and $y = 4x - 5$ has no solution. True False
- c. $2(3x + 4) = y$ and $y = 6x + 5$ has only one solution. True False
- d. $9 + y = 6x$ and $6x - y = 9$ has an infinite number of solutions. True False

- 2** Consider the equation: $5(3x - 9) = 2(6x + 9)$.

Part A

How many solutions will the equation have? Explain how you know.

Part B

Solve the equation to confirm your answer to Part A.

Show your work.

- 3** Solve the inequality $4 - 2x > 10$.



Unit 3 Unit Assessment *continued***Form A**

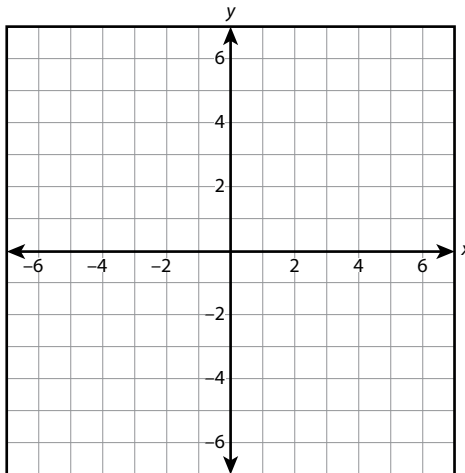
- 4** Consider the system of equations.

$$y = 4x + 2$$

$$y = -2x + 6$$

Part A

Graph the equations. Estimate the solution of the system of equations.



Estimated solution: _____

Part B

Solve the system algebraically.

Show your work.

Exact solution: _____



Unit 3 Unit Assessment *continued***Form A**

- 5** Callie has a new kitten. The kitten weighs 3 pounds less than half the weight of Callie's cat. Together, the cat and the kitten weigh 18 pounds. Which system of equations could be used to find the weight of each animal?

A $y = \frac{1}{2}x + 3$

$y = -x + 18$

C $y = \frac{1}{2}x - 3$

$y = -x + 18$

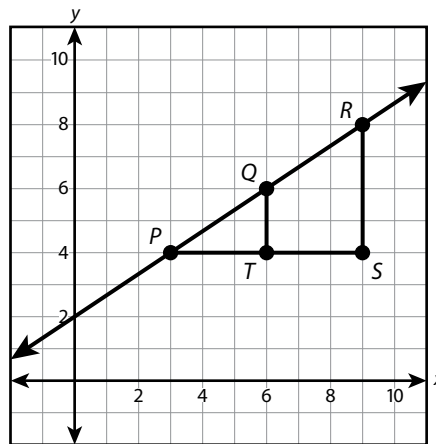
B $y = \frac{1}{2}x + 3$

$y = x + 18$

D $y = \frac{1}{2}x - 3$

$y = x + 18$

- 6** Choose *Yes* or *No* for each statement about the graph.



- a.** The slope of the line between points P and Q is the same as the slope of the line between points P and R . Yes No
- b.** Triangles PQT and PRS are similar. Yes No
- c.** The slope of the line between points P and R is $\frac{3}{2}$. Yes No
- d.** The equation of the line that passes through points P , Q , and R is $y = \frac{3}{2}x + 2$. Yes No



Unit 3 Unit Assessment *continued***Form A**

- 7** The table shows the number of markers in different numbers of boxes.

Number of Boxes	1	2	3	4	5
Number of Markers	12	24	36	48	60

Part A

Graph this proportional relationship, representing the number of boxes on the horizontal axis. Be sure to number and label your axes.

Part B

What is the unit rate, or slope, of the relationship? What does it represent in this situation?

- 8** Which of these systems of equations has infinitely many solutions?

A $y = -2x + 7$
 $10x + 5y = 35$

C $y = -\frac{3}{4}x + 2$
 $\frac{3}{4}x + y = -1$

B $y = 2x + 4$
 $6x + 3y = 9$

D $y = \frac{1}{3}x - 5$
 $8x + 5y = 10$



Unit 3 Unit Assessment *continued***Form A**

- 9** An online video streaming service offers two plans for unlimited streaming. Plan A has a one-time \$25 membership fee and is \$8 per month. Plan B has a \$5 membership fee and is \$12 per month.

Part A

Write a system of equations that represents the two plans.

Part B

For which months is Plan A the less expensive option? For which months is Plan B the less expensive option?

Show your work.

Plan A is less expensive _____.

Plan B is less expensive _____.

Part C

If the membership fee for Plan B is dropped, how does that change your answer to Part B? Why?



Unit 3 Unit Assessment *continued***Form A**

- 10** One equation in a system of equations is $y = \frac{2}{3}x - 5$. For which second equation would the system have exactly one solution? Choose all that apply.

A $y = 3x + 5$

B $y = 5x + \frac{2}{3}$

C $3y = 2x + 4$

D $2y = 3x + 7$

E $y = 2\left(\frac{1}{3}x - 15\right)$

- 11** Xavier is considering two lawn care services. Premier Landscaping charges \$15 for travel to Xavier's house and \$55 per hour for maintaining his lawn. Ace Landscaping does not have a travel fee, but charges \$65 per hour for lawn maintenance.

Part A

Write a system of equations that represents the lawn care services.

Part B

Without solving the system of equations, explain what the solution represents.

- 12** The y -intercept of the graph of a line is located at $(0, -2)$ and the line passes through the point $(5, 1)$. Which is the equation of this line.

A $y = \frac{3}{5}x - 2$

C $y = \frac{5}{3}x - 2$

B $y = \frac{3}{5}x + 2$

D $y = \frac{5}{3}x + 2$

