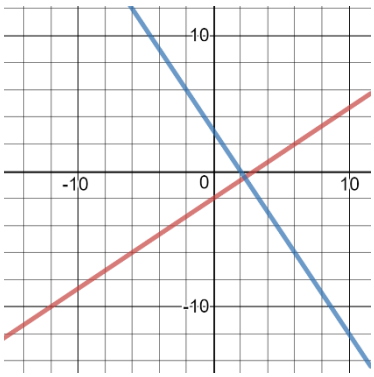
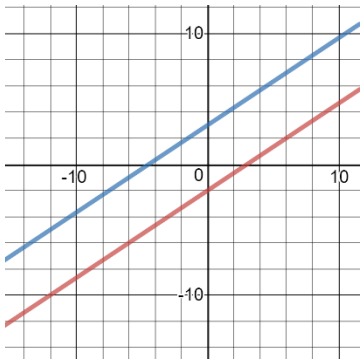
Unit 7 Test Review

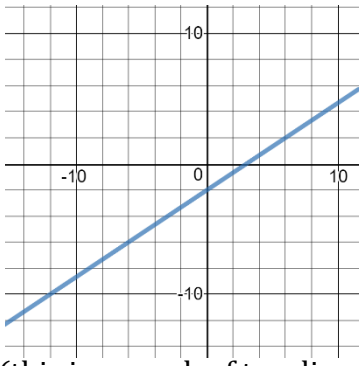
Name _____ **Test date** _____

Directions: Select the best answer for each of the following.

1. How many solutions exist for each system of equations graphed?







(this is a graph of two lines on top of each other)

2. Solve the following system of linear equations

$$\begin{cases} 3x + y = 7 \\ 5x + 2y = 10 \end{cases}$$

For #3 and #4, The talent show committee sold a total of 530 tickets in advance. Student tickets cost $3 each and the adult tickets cost $4 each. The total receipts were $1740.

3. Write a system of equations that models the problem

4. Solve the system and explain what your answer means.

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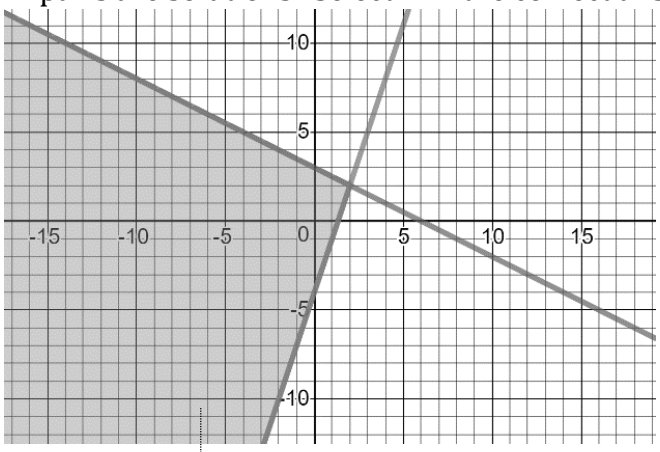
5. Which of the following ordered pairs are solutions to the system of inequalities? Circle ALL the correct answers.

$$\begin{cases} y < 2x + 5 \\ y \geq -\frac{2}{3}x - 2 \end{cases}$$

A. $(2,10)$ B. $(5,-5)$ C. $(8,20)$ D. $(0,-2)$ E. $(0,5)$ F. $(0,0)$

6. The graph of the system of linear inequalities is shown. Which of the following ordered pairs are solutions? Select ALL the correct answers.



A. $(2,5)$ B. $(0,0)$ C. $(-2,-10)$ D. $(5,-6)$ E. $(-10,-10)$ F. $(0,-3)$

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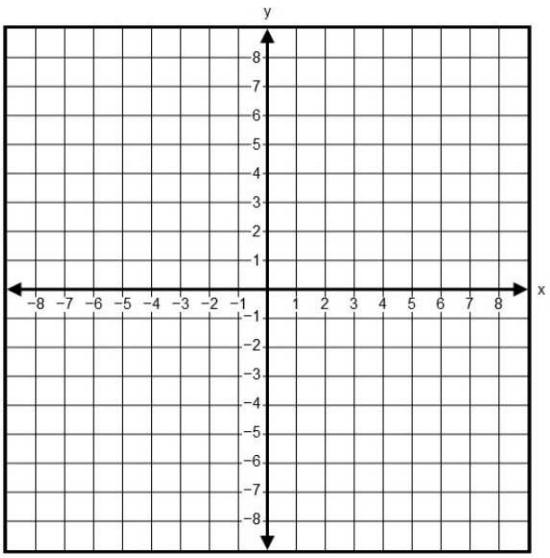
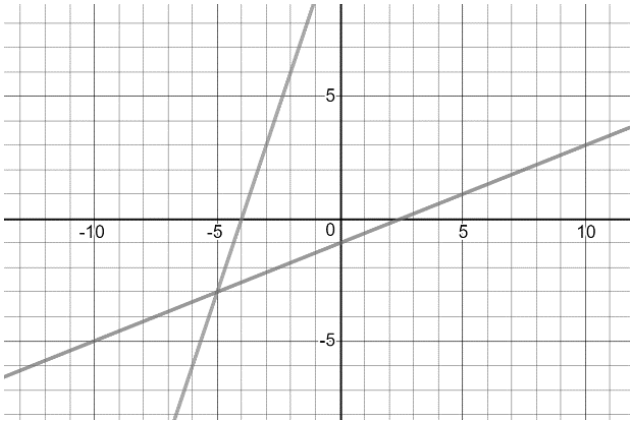
7. Graph the solution to the system of inequalities

$$\begin{cases} y > \frac{1}{2}x + 3 \\ y \le -2x + 5 \end{cases}$$



8. The graph shows the system $\begin{cases} y = 3x + 12 \\ y = \frac{2}{5}x - 1 \end{cases}$



a) Use the graph to determine the solution.

Solution

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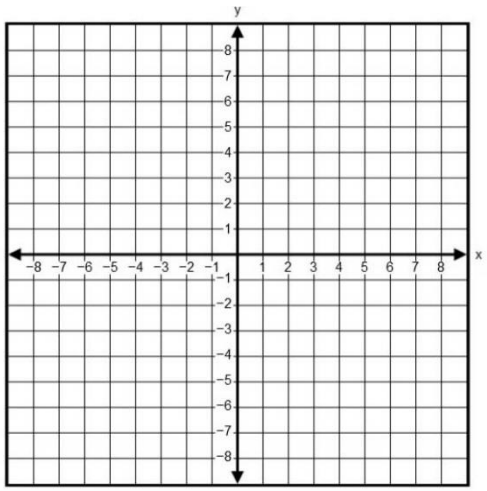
9. Determine the solution to the following system by graphing:

$$\begin{cases} y = -\frac{3}{2}x + 3 \\ y = \frac{3}{4}x + 3 \end{cases}$$

Solution:



Directions: For #10-15, find the solution to each of the following systems. Use whichever method you prefer for each.

10. $\begin{cases} y = \frac{2}{5}x - 2 \\ 2x - 5y = 10 \end{cases}$

Solution:

11. $\begin{cases} 3x + 2y = -8 \\ 4x - y = 4 \end{cases}$

Solution:

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12. $\begin{cases} 2x+5y=20 \\ 4x-3y=14 \end{cases}$	Solution:	13. $\begin{cases} x-3y=-6 \\ -2x+9y=14 \end{cases}$	Solution:
14. $\begin{cases} 3x-6y=9 \\ -2x+4y=6 \end{cases}$	Solution:	15. $\begin{cases} 4x-y=8 \\ -6x+3y=-15 \end{cases}$	Solution:

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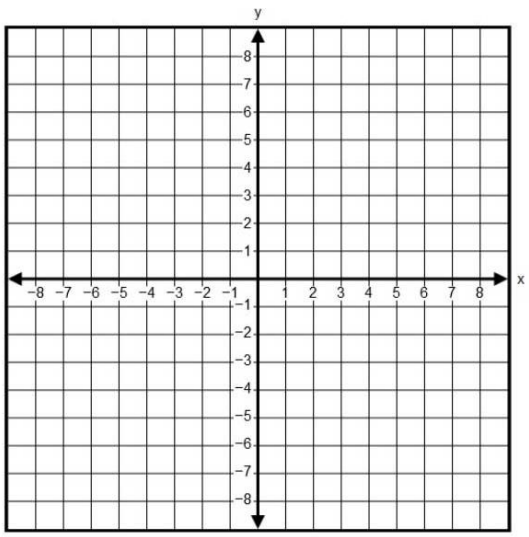
16. Graph the following system of linear inequalities.

$$\begin{cases} y < \frac{2}{3}x - 4 \\ y \leq -\frac{1}{2}x + 3 \end{cases}$$



Directions: Solve each of the following problems by a) writing a system of equations and b) solving the system of equations.

17. Jacob and Joe are selling cheesecakes for a school fundraiser. Customers can buy New York style cheesecakes and strawberry cheesecakes. Jacob sold 6 New York style cheesecakes and 6 strawberry cheesecakes for a total of $96. Joe sold 1 New York style cheesecake and 4 strawberry cheesecakes for a total of $52. What is the cost each of one New York style cheesecake and one strawberry cheesecake?

a)

b)