1. Solve the following system using **graphing**:
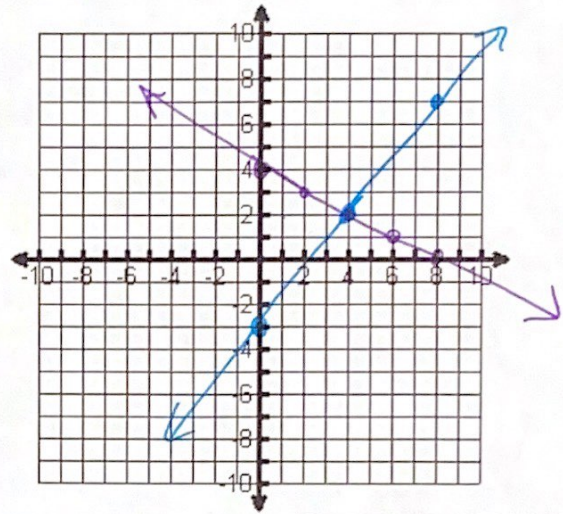
$x + 2y = 8$ $y = -\frac{1}{2}x + 4$

$5x - 4y = 12$ $y = \frac{5}{4}x - 3$

$(4, 2)$

---

2. Solve the following system of equations by using **elimination**:

$-12x + 5y = 23$

$-2x + y = 3$ ← multiply by -6 to eliminate x
                              or by -5 to eliminate y.

$(-4, -5)$

---

3. Solve the following system of equations using **substitution**:

$y = \boxed{5x + 9}$

$2x + 4y = 14$
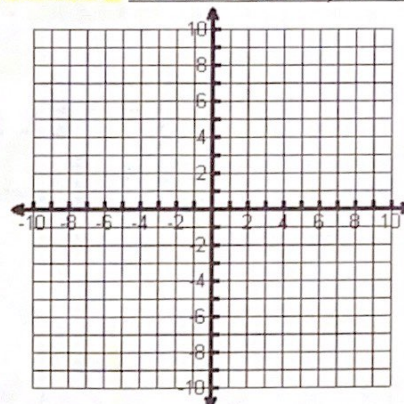
$2x + 4(5x + 9) = 14$

$(-1, 4)$

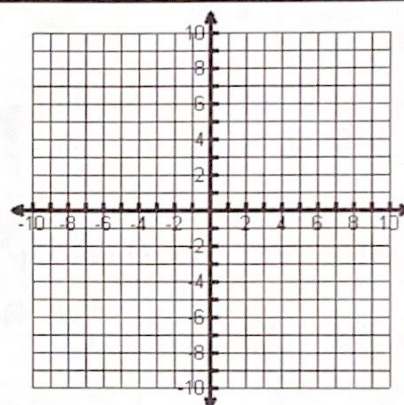Solve the following systems of equations using the method of your choice. You must show your work to receive credit.:

4.
$$5x - 4y = 20$$
$$6x + y = -5$$

$(0, -5)$

5.
$$3x + 3 = -6y$$
$$6x + 12y + 6 = 0$$

∞ many

Solve each of the following. **You must show your equations and work to receive credit.**

6. Rent-A-Car rents compact cars for a fixed amount per day plus a fixed amount for each mile driven. Benito rented a car for 4 days, drove it 430 miles, and spent $92.70. Lisa rented the same car for 5 days, drove it 360 miles, and spent $110.55. What is the charge per day and the charge per mile for the compact car?

$$4x + 430y = 92.70$$
$$5x + 360y = 110.55$$

It would cost $19.95 per day + $.03 per mile

7. You are buying supplies for a party this weekend. Balloons cost $2.25 a package and streamers cost $0.85 a roll. If you bought 12 items and spent a total of $20, how many of each item did you buy?
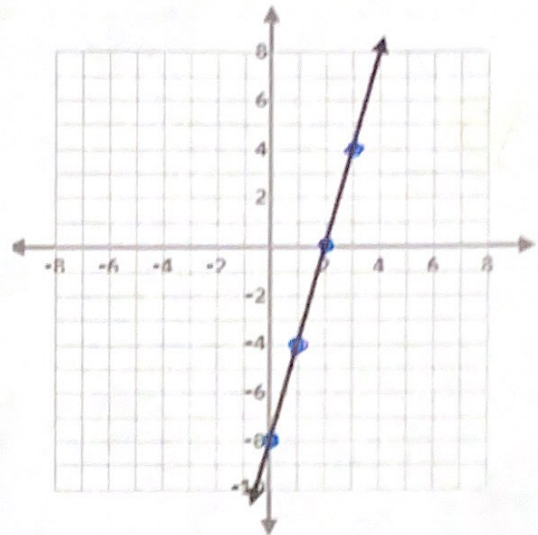
$$x + y = 12$$
$$2.25x + .85y = 20$$

You bought 7 balloons and 5 streamers

REVIEW from Unit 1

8.

Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

Increasing: $(-\infty, \infty)$ Decreasing: $\emptyset$

$(0, -8)$ y – int in function notation: $f(0) = -8$

Rate of Change ~~(6, 5)~~   Zero: $X = 2$

4

End Behavior: $x \to -\infty,\ f(x) \to -\infty$

$x \to \infty,\ f(x) \to \infty$

Multiple Choice. Circle the correct letter AND write the corresponding capital letter.

9. Given the following set of equations, which of the variables will require the FEWEST steps to isolate?

$$5x - 3y = -7$$
$$2x + y = 18$$

D

A. x in the first equation   C. x in the second equation

B. y in the first equation   D. y in the second equation

10. Given $\begin{array}{l} 4x + 7y = 19 \\ -2x - 3y = 18 \end{array}$, which is the most efficient first step to solve by elimination?

A

A. Multiply the bottom equation by 2   C. Multiply the bottom equation by 1/2

B. Solve for x in the first equation.   D. Multiply the top equation by 3 and the bottom equation by 7

11. Given the set of equations: $\begin{array}{l} -8 - y = -3x \\ 2x = -25 + 5y \end{array}$, what are the coordinates of the solution?

B

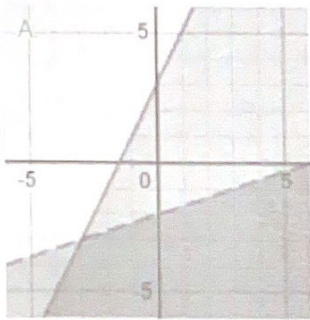A. $(5, -7)$ B. $(5, 7)$ C. $(-7, -5)$ D. $(7, 5)$

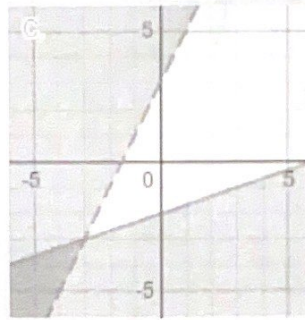12. Which of the following graphs represents the given system of inequalities?

$$x - 3y < 6$$
$$2x - y \geq -3$$

D
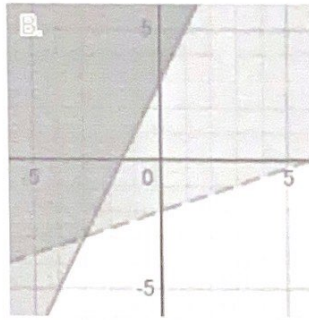
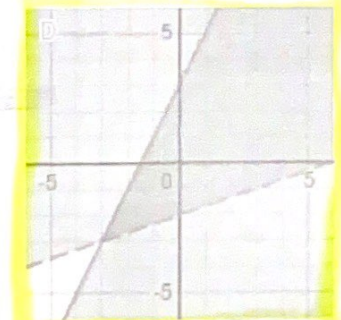| A.	B.	C.	D.

13. The junior and senior classes decided to plan a trip to the Georgia Aquarium this year. The junior class rented and filled 9 vans and 3 buses with 219 students. The seniors rented and filled 5 vans and 9 buses with 349 students. Knowing that each van and each bus carried the same number of students, how many students can a van carry and how many students can a bus carry?

D

$$9x + 3y = 219$$
$$5x + 9y = 349$$

A. A van carries 11 and a bus carries 41   C. A van carries 13 and a bus carries 42

B. A van carries 20 and a bus carries 36   D. A van carries 14 and a bus carries 31

14. How many solutions does the following system of equations have?

$$5x = -y + 8$$
$$15x + 12 + 3y = 0$$

C

A. Exactly 1 solutions   C. No solutions

B. Exactly 2 solution   D. Infinite solutions

15. Which of the following points is a solution to the given system?

$$x - 2y \leq -4$$
$$3x + 2y > -4$$

C

A. $(-4, 1)$ B. $(4, 1)$ C. $(1, 4)$ D. $(-1, -4)$