Coordinate Algebra **December 11**

Semester Exam Review Day-1

1. Combine like terms: 7a + 4b – 3a -2b. $4a+2b$

2. How would you express 8n in a verbal expression? the product of eight and n.

3. Solve $a = \frac{b-4}{c}$ for b. $c \cdot a = \frac{b-4}{c} \cdot c$

$ac = b-4$

$ac+4 = b$

4. Which of the following equations has NO solution?

a. a = -a + 2 b. a + 2 = a + 2 c. a + a = 2 d. a + 2 = a – 2

5. Sean can spend at most $15.00 on snacks. He has already spent $5.00. Write an inequality that could be solved to determine how much money Sean has left to spend on snacks?

$x - 5 \leq 15$

6. Solve by elimination: $\begin{Bmatrix} 2x + y = 10 \\ x + y = 2 \end{Bmatrix}$.

$8 + y = 2$

$y = -6$

$(8, -6)$

$-1(x + y = 2)$

$-x - y = -2$

$2x + y = 10$

$x = 8$

7. Solve by substitution: $\begin{Bmatrix} y = 2x \\ y = 4x + 12 \end{Bmatrix}$.

$2x = 4x + 12$

$-4x \quad -4x$

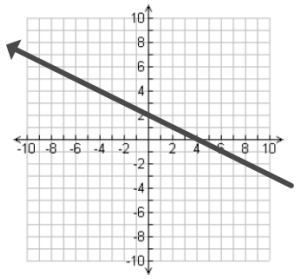
$-2x = 12$

$x = -6$

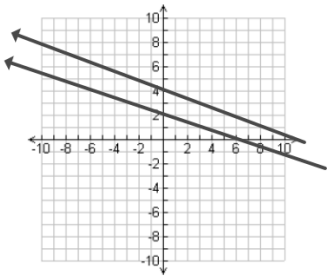
For 8 - 10, graph the system of equations.

8. $2x + 4y = 8$
$y = -\frac{1}{2}x + 2$

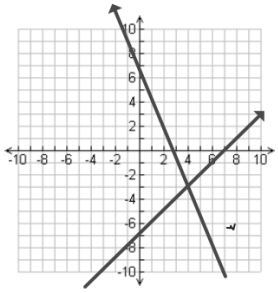
$4y = -2x + 8$
$y = -\frac{1}{2}x + 2$



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

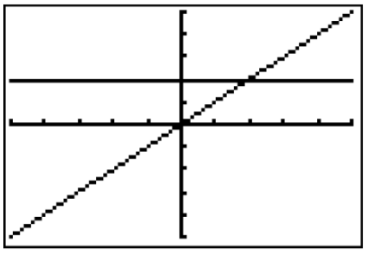


10. $y = x - 7$
$y = -2x + 5$



11. The graph of a system of linear equations is shown below. What is the solution of the system?

a. (0,0)
b. (2,2)
c. (0,2)
d. (1,1)



12. What does it mean if (3,2) is a solution of $\begin{cases} y = x - 1 \\ y = -x + 5 \end{cases}$? The solution set is true for both equations

$2 = 3 - 1$ ✓ $2 = 2$

$2 = -3 + 5$ ✓ $2 = 2$

13. Write a system of equations and solve for the following scenario:

A math teacher wants to buy 25 new scientific calculators for the classroom. Ace and Zaro make two different types of calculators. Ace calculators cost $15 each. Zaro calculators cost $10 each. The math teacher has $350 to spend. How many of each calculator can he buy?

$x = 20$
$y = 5$

$x + y = 25$
$15x + 10y = 350$

14. (-2, 3) is the solution to which system of equations?

$-2 + 3$

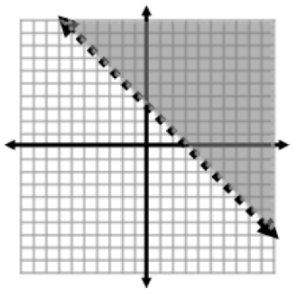
a. $x + y = -1$, $3x - y = -9$

b. $x + y = 1$, $2x - y = -7$

c. $3x + y = 2$, $-3x - 2y = -7$

d. $x + y = 5$, $2x - y = 1$

15. Which inequality is represented by the graph shown?

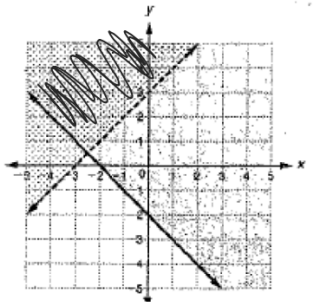


a. $y \leq -x + 3$
b. $y \geq -x + 3$
c. $y < -x + 3$
d. $y > -x + 3$

16. The drama club is having a car wash as a fundraiser. They wash x cars at $5 each and y trucks at $8 each. They will wash at least 26 cars and 15 trucks. They need to make at least $250. Write a system that describes this situation.

$5x + 8y \geq 250$
$x \geq 26$
$y \geq 15$

17. Which of the following is a solution of the system graphed below?



a. (-1,2)
b. (-3,3)
c. (2,1)
d. (-4,1)

18. Solve $10x + 9 = 3 + 2(x-5)$.

19. Solve $-5t - 3 + 2t = 24$.

$$-5t-3+2t=24$$
$$-3t=27$$
$$t=-9$$

20. Write a statement in words that best describes the solution of $2d - 3 > 11$?

Three less than the product of two and d is greater than eleven.

21. Solve $-2x - 6 = 2x + 6$

$$-2x-6=2x+6$$
$$\underline{-2x} \quad \underline{-2x}$$
$$-4x-6=6$$
$$\underline{+6} \quad \underline{+6}$$
$$-4x=12$$
$$x=-3$$

22. A parking lot holds 42 cars. There are 26 cars in the lot already.
Write an inequality that can used to all the numbers of cars, c, that can still park in the lot?

$$C-26 \leq 42$$

Study for your Semester Exam!