

Algebra 2 - Chapter 3 Practice Test

1. At the local pet store, hamsters cost \$8 each and mice cost \$5 each. If Sameer bought 20 rodents for a total cost of \$121, not including tax, how many mice did he buy?

2. Solve the system .
$$\begin{cases} -x - y = 2 \\ 2x - y = -13 \end{cases}$$

3. Solve the inequality. $|4x + 2| < 18$

4. What is the z value for the solution to the following system?

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

5. What is the y value for the solution to the following system?
$$\begin{cases} 3x + y = 3 \\ y = x - 5 \end{cases}$$

6. What is the y value for the solution to the following system?

$$\begin{cases} 3x + 2y = 7 \\ 5x - 7y = -9 \end{cases}$$

7. Solve the system .

$$\begin{cases} 3x - y - z = -6 \\ -x + 2y + z = -10 \\ -2x + 2y + 2z = -8 \end{cases}$$

8. Solve: $3|4x + 3| - 2 = 7$

9. Solve the system by graphing.

$$\begin{cases} -x - y = 5 \\ x - 4y = 0 \end{cases}$$

10. Solve the system .
$$\begin{cases} -2x - 2y = -2 \\ 8x + 8y = 1 \end{cases}$$

11. Solve the system of inequalities by graphing.
$$\begin{cases} y \leq -2x + 3 \\ y > 4x - 3 \end{cases}$$

12. Solve the system .
$$\begin{cases} x + 2y = 8 \\ 4x - 2y = -8 \end{cases}$$

13. Solve the system of inequalities by graphing.
$$\begin{cases} x \geq 2 \\ y > 3 \end{cases}$$

14. Which coordinate pair is a solution:

$$\begin{cases} y \geq 4x \\ y < x + 4 \end{cases}$$

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

d. (-3, 7)

15. Solve the system .

$$\begin{cases} -2x - 2y - z = 0 \\ -x - y - 2z = -2 \\ x + y - z = -4 \end{cases}$$

16. Solve the system .
$$\begin{cases} \frac{1}{4}v + w = 1 \\ \frac{3}{2}v + 4w = 8 \end{cases}$$

17. Solve the system of inequalities by graphing.
$$\begin{cases} y \geq -4x - 1 \\ y \leq \frac{1}{2}x + 1 \end{cases}$$

18. Solve the system:

$$\begin{cases} -2x + 2y + 2 = 0 \\ -4x + 4y = 3 \end{cases}$$

19. A game was attended by 600 people and they made a total of \$2400. It costs \$3 for children and \$8 for adults to attend the game. Set up a system of equations that represents the numbers of adults and children who attended the game.

20. Solve the system .
$$\begin{cases} 3x + y = -\frac{1}{2} \\ \frac{x}{3} - y = 1 - 2x \end{cases}$$

The following 3 problems will be like the extra credit problems on the test.

21. Subtract.

$$\begin{bmatrix} -1 & 2 & 0 \\ -5 & 8 & 9 \end{bmatrix} - \begin{bmatrix} -1 & 3 & -8 \\ 1 & 4 & 7 \end{bmatrix}$$

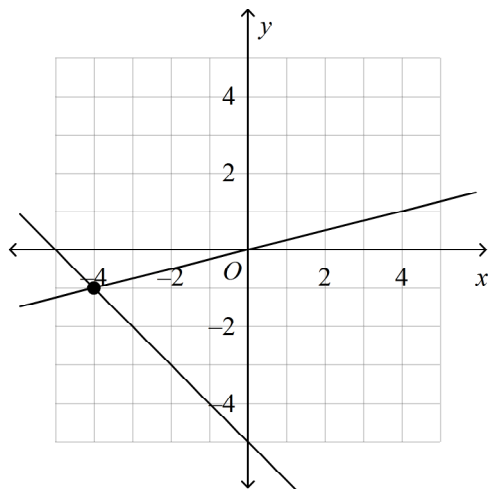
22. Multiply.
$$\begin{bmatrix} 4 & 0 \\ 9 & 8 \end{bmatrix} \begin{bmatrix} -5 & -1 \\ -1 & -2 \end{bmatrix}$$

23. Use Cramer's Rule to find the x value for the solution to the system.

$$\begin{cases} 2y - 2z = -2 \\ x + 4y + 2z = -25 \\ 2x - 4y + 4z = 10 \end{cases}$$

Algebra 2 - Chapter 3 Practice Test Answer Section

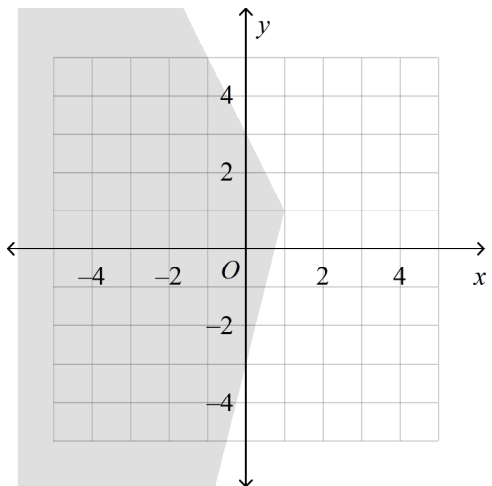
- 13 mice
- $(-5, 3)$
- $-5 < x < 4$
- 4
- 3
- 2
- $(-5, -6, -3)$
- $x = 0$ or $x = -1\frac{1}{2}$
- 9.



$(-4, -1)$

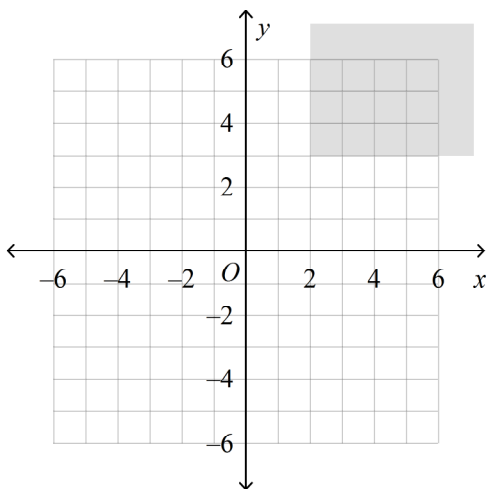
10. no solutions

11.



12. $(0, 4)$

13.

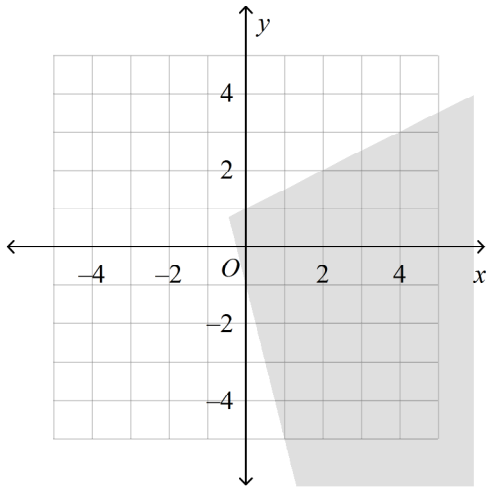


14. A

15. no solution

16. $(8, -1)$

17.



18. no solutions

$$19. \begin{cases} a + c = 600 \\ 8a + 3c = 2400 \end{cases}$$

$$20. \left(\frac{3}{11}, \frac{29}{11} \right)$$

$$21. \begin{bmatrix} 0 & -1 & 8 \\ -6 & 4 & 2 \end{bmatrix}$$

$$22. \begin{bmatrix} -20 & -4 \\ -53 & -25 \end{bmatrix}$$

$$23. x = 3$$