Algebra 2 - Chapter 3 Practice Test
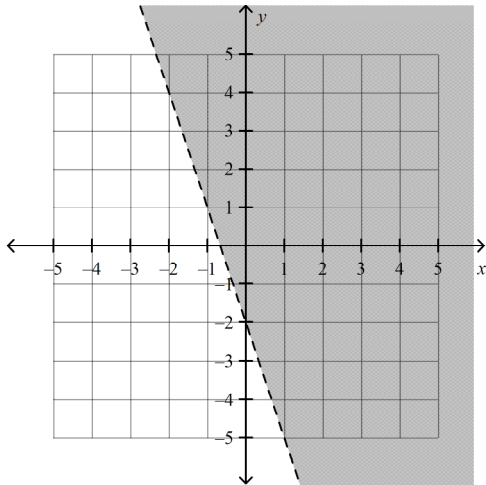
1. Write an inequality to represent the graph.
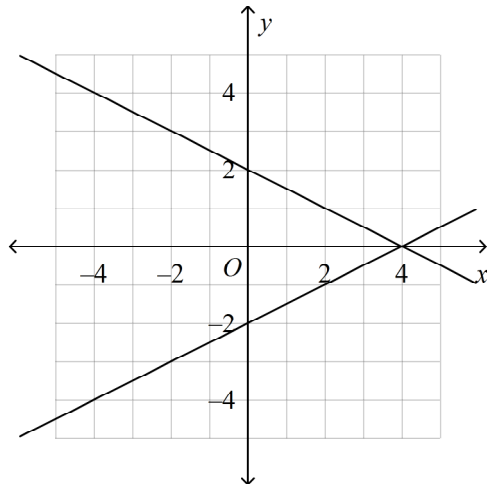

   a. $y > -2x - 3$ b. $y > -3x - 2$ c. $y \geq -3x - 2$ d. $y < -3x - 2$

2. Simplify by combining like terms.. $-(2y - 5) - 8y$

   a. $-5y$ b. $10y - 5$ c. $-10y + 5$ d. $10y + 5$

3. What is the x value for the solution to the following system?

$$\begin{cases} 2x + 4y = 12 \\ 2x - 2y = -6 \end{cases}$$

   a. -3 b. 0 c. -1 d. 3

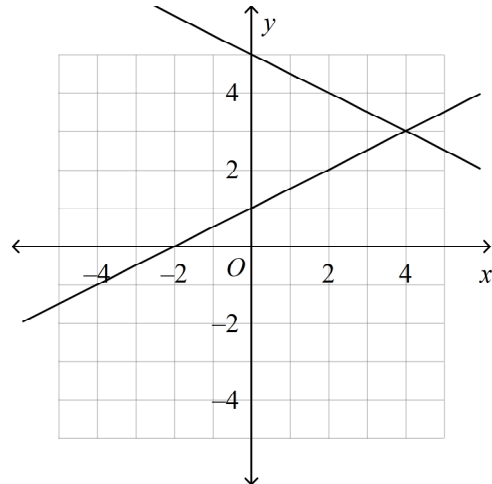4. Solve the system by graphing: $\begin{cases} -x + 2y - 2 = 0 \\ 3x - 6y = 4 \end{cases}$
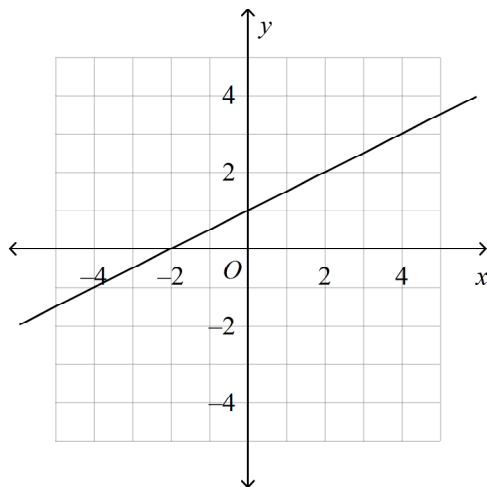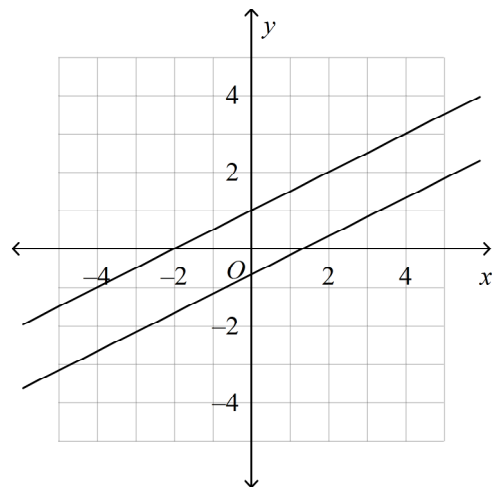
a.

(4, 0)

c.

(4, 3)

b.

infinite solutions

d.

no solutions

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

$$\begin{cases} -x - 3y - 3z = 1 \\ -2x - y - z = -3 \\ 3x + y + 2z = 10 \end{cases}$$

a. −6　　　　b. 5　　　　c. 2　　　　d. 6

6. Solve the system:
$$\begin{cases} -2x - y + 2z = 8 \\ -4x - 3y + 4z = 15 \\ -2x - 2y + 2z = 5 \end{cases}$$
   a. $(2, 1, -2)$ b. $(-2, 1, 2)$ c. $(2, -1, 2)$ d. no solution

7. A rental car agency charges a flat fee of $29.00 plus $1.25 per day to rent a certain car. Another agency charges a fee of $20.25 plus $3.00 per day to rent the same car.
   a. Write a system of equations to represent the cost c for renting a car at each agency for d days.
   b. Find the number of days for which the costs are the same. Round your answer to the nearest whole day.

   a. **a.** $\begin{cases} c = 1.25d + 20.25 \\ c = 3.00d + 29.00 \end{cases}$

       b. 5

   c. **a.** $\begin{cases} c = 1.25d + 20.25 \\ c = 3.00d + 29.00 \end{cases}$

       b. 8

   b. **a.** $\begin{cases} c = 1.25d + 29.00 \\ c = 3.00d + 20.25 \end{cases}$
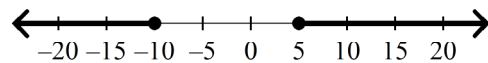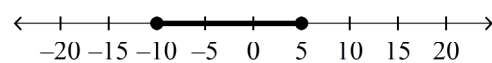
       b. 5

   d. **a.** $\begin{cases} c = 1.25d + 29.00 \\ c = 3.00d + 20.25 \end{cases}$

       b. 8

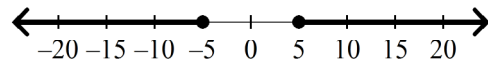8. Solve the inequality. Graph the solution: $|2x + 5| \geq 15$
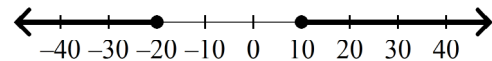   a. $x \leq -10$ or $x \geq 5$

       −20 −15 −10 −5 0 5 10 15 20

   c. $x \geq -10$ or $x \leq 5$

       −20 −15 −10 −5 0 5 10 15 20

   b. $x \leq -5$ or $x \geq 5$

       −20 −15 −10 −5 0 5 10 15 20

   d. $x \leq -20$ or $x \geq 10$

       −40 −30 −20 −10 0 10 20 30 40
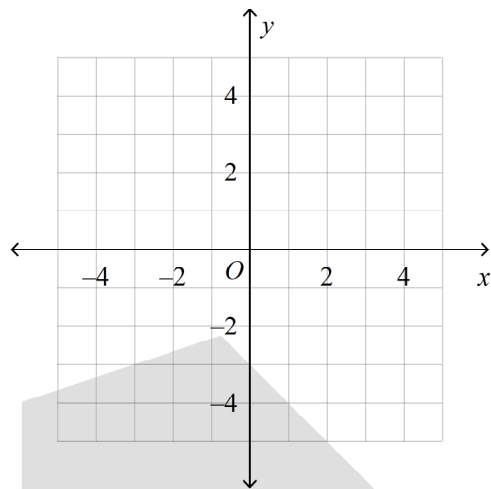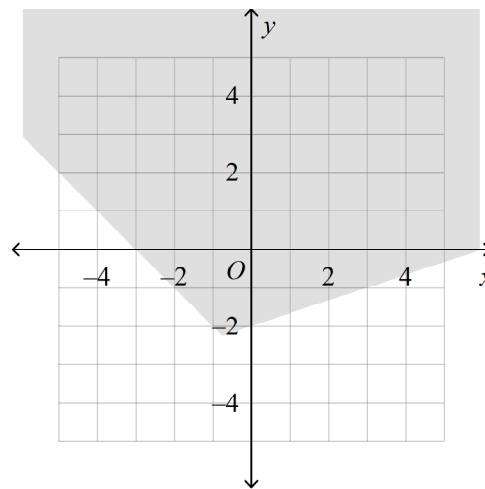
9. Solve the system of inequalities by graphing. $\begin{cases} y \geq -x - 3 \\ y \leq \dfrac{1}{3}x - 2 \end{cases}$

a.

c.

b.

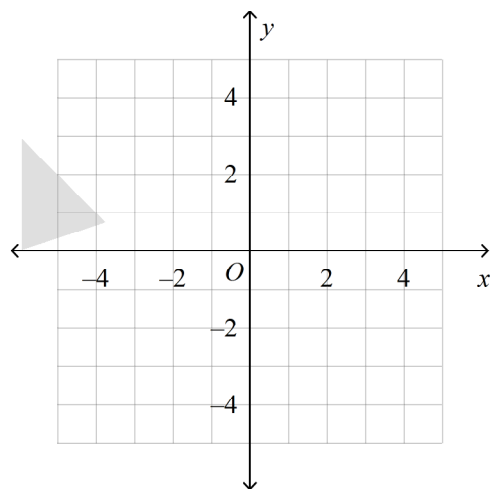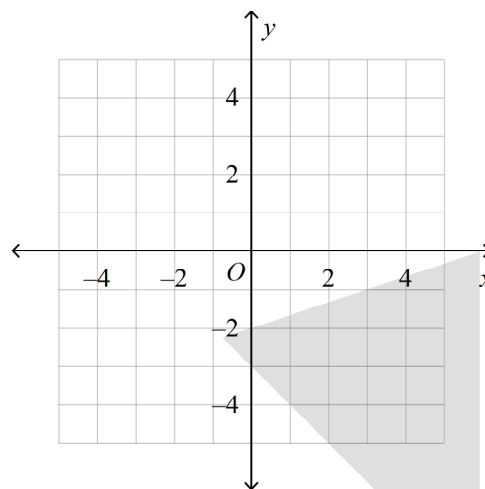

d.

10. Solve: $-1 + 12b \geq 3(4b - 2)$

a. $b \leq \dfrac{5}{24}$

c. $b \geq \dfrac{5}{24}$

b. no solutions

d. all real numbers
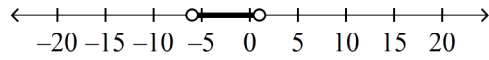
11. What is the y value for the solution to the following system?

$$\begin{cases} 2x + 3y = 2 \\ 7x - 5y = 7 \end{cases}$$
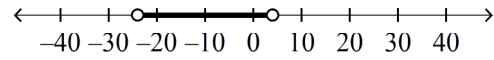
    a. −2   b. 1   c. 0   d. −1

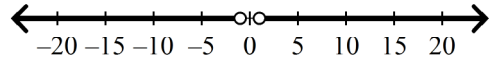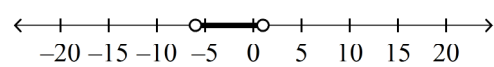12. Solve the inequality. Graph the solution: $|\,4x + 10\,| < 14$

    a. $-6 > x > 1$ c. $-24 < x < 4$

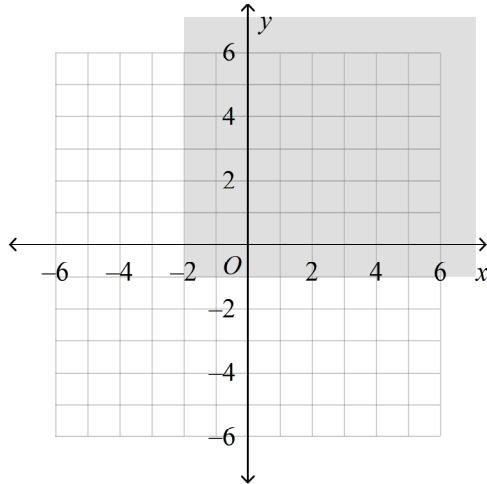   b. $x < -1 \text{ or } x > 1$ d. $-6 < x < 1$

5

13. Solve the system of inequalities by graphing. $\begin{cases} x \geq -1 \\ y > -2 \end{cases}$

a.

c.
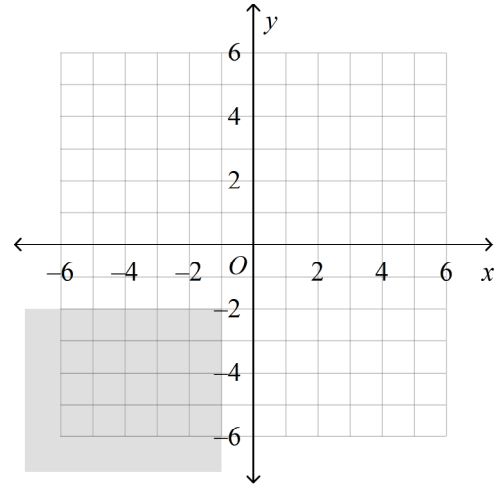
b.

d.

14. Solve the system: $\begin{cases} x + 2y = -7 \\ 4x + 8y = -28 \end{cases}$

    a. infinite solutions   c. $(3, 7)$

    b. $(-3, -7)$ d. no solutions

15. Solve the system by the method of substitution. $\begin{cases} -3x + y = 8 \\ 4x - y = -9 \end{cases}$

    a. $(5, -1)$ b. $(-5, 1)$ c. $(1, -5)$ d. $(-1, 5)$

16. Solve: $5y + 3 = -3(y - 7)$

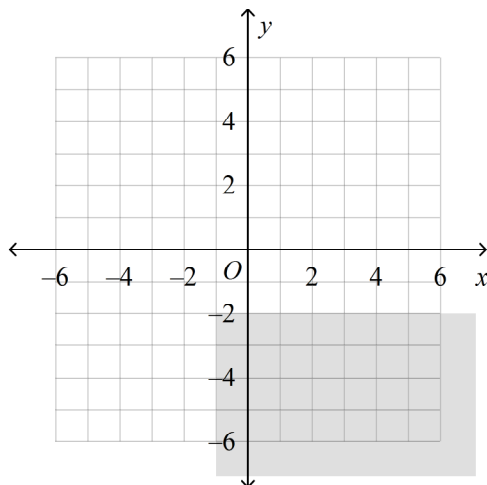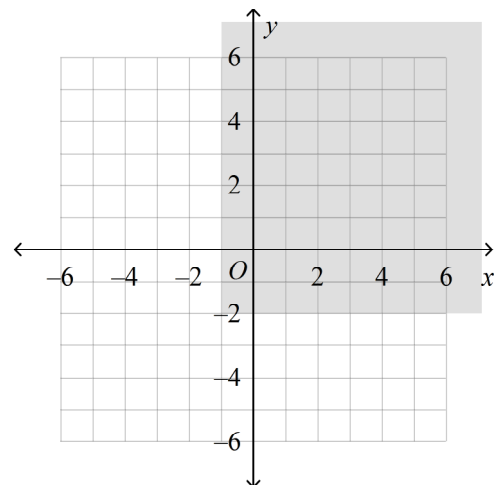   a. $-\dfrac{4}{5}$ b. $2\dfrac{1}{4}$ c. $-1\dfrac{1}{4}$ d. $\dfrac{4}{9}$

17. Solve: $4|x - 4| - 7 = 13$

    a. $x = 6$ or $x = -1$ c. $x = 9$ or $x = -1$

    b. $x = 6$ or $x = 9$ d. $x = 6$ or $x = -\dfrac{1}{2}$

18. Which coordinate pair is a solution of $\begin{cases} y \geq x \\ y < x + 2 \end{cases}$.

    a. (-5, -7)   b. (3, 4)   c. (2, 5)   d. (0, -3)

19. How many solutions does the system have? $\begin{cases} y = -2x + 4 \\ 2x + y = -5 \end{cases}$.

    a. This system has two solutions

    b. This sytem has one solution.

    c. This system has infinitely many solutions.

    d. This system has no solutions.

20. At the local pet store, zebra fish cost \$5 each and neon tetras cost \$4 each. If Ernesto bought 10 fish for a total cost of \$42, not including tax, how many zebra fish did he buy?

    a. 6 zebra fish   c. 5 zebra fish

    b. 8 zebra fish   d. 2 zebra fish

21. What is the y value for the solution to the following system?
$$\begin{cases} 2x + y = 5 \\ y = x + 2 \end{cases}$$

    a. 1   b. 5   c. -5   d. 3

22. Evaluate the expression for the given value of the variable(s).

$x^3 + 3x^2 + 3x + 1; x = -3$

    a. 46   b. 10   c. –8   d. –9

Algebra 2 - Chapter 3 Practice Test
Answer Section

1. B
2. C
3. B
4. D
5. B
6. D
7. B
8. A
9. D
10. D
11. C
12. D
13. D
14. A
15. D
16. B
17. C
18. B
19. D
20. D
21. D
22. C