

Chapter Test A

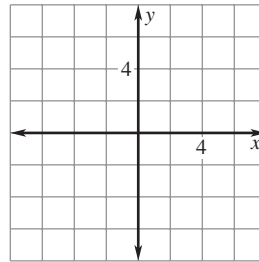
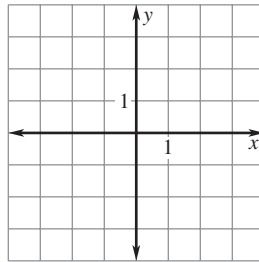
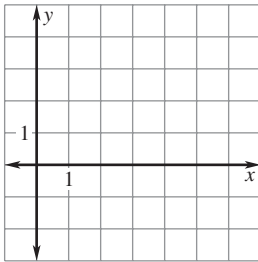
For use after Chapter 3

Graph the linear system and tell how many solutions it has. If there is exactly one solution, estimate the solution and check it algebraically.

1. $x + y = 4$
 $x - y = 2$

2. $y = 3x$
 $2y = 6x$

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



Solve the system using any algebraic method.

4. $x + y = 2$
 $3x - 2y = 6$

5. $y = 3x$
 $x + y = 12$

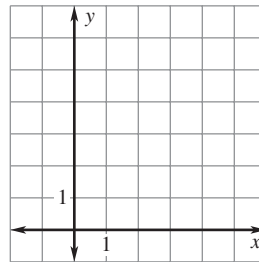
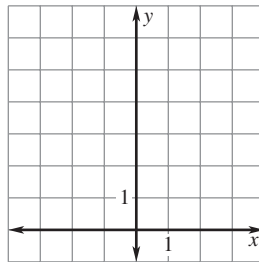
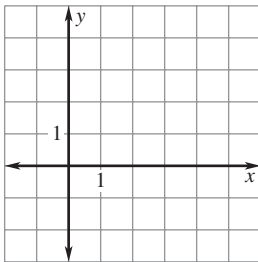
6. $5x - 2y = 30$
 $x + 2y = 6$

Graph the system of linear inequalities.

7. $x > 3$
 $y \leq 2$

8. $y > x + 4$
 $x \leq 1$

9. $-x + y \leq 2$
 $x \geq 0$
 $y \geq 4$



Find the minimum and maximum values of the objective function subject to the given constraints.

10. Objective function: $C = x + y$

Constraints: $x \geq 0$
 $y \geq 0$
 $y \leq -\frac{1}{2}x + 2$

11. Objective function: $C = 5x + 4y$

Constraints: $x \leq -2$
 $x \geq -4$
 $y \geq 1$
 $y \leq 6$

Answers

1. Use grid at left. _____
2. Use grid at left. _____
3. Use grid at left. _____
4. _____
5. _____
6. _____
7. Use grid at left. _____
8. Use grid at left. _____
9. Use grid at left. _____
10. _____
11. _____

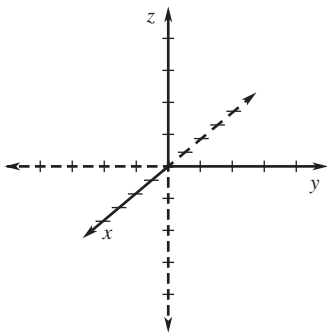
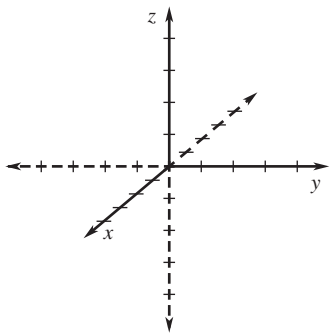
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Plot the ordered triple in a three-dimensional coordinate system.

12. $(1, 0, -1)$

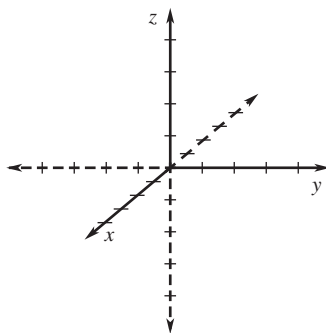
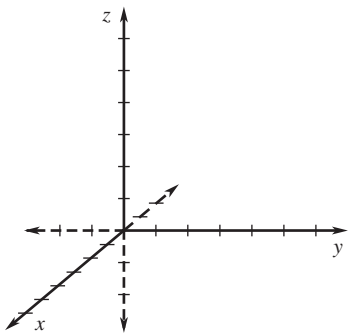
13. $(-3, 4, 2)$



Sketch the graph of the equation. Label the points where the graph crosses the x -, y -, and z -axes.

14. $x + y + z = 6$

15. $2x + y - z = 4$



16. Write the linear equation $x + y + z = 9$ as a function of x and y . Then evaluate the function when $x = 3$ and $y = 5$.

Solve the system using any algebraic method.

17. $2x - 3y + 2z = 3$
 $2y - 3z = -6$
 $z = 4$

18. $-x + 2y - 3z = -8$
 $2x + 3y + z = -3$
 $-2x - y + 2z = 2$

19. **Compact Discs** At a music store, compact discs cost \$14.95 each, but are now on sale for \$12.95 each. If you bought ten compact discs in the past month, and spent a total of \$139.50, how many did you buy on sale?

20. **Ages** You are 4 years older than your brother. Two years ago, you were 1.5 times as old as he was. What is your present age?

- 12. Use graph at left. _____
- 13. Use graph at left. _____
- 14. Use graph at left. _____
- 15. Use graph at left. _____
- 16. _____
- 17. _____
- 18. _____
- 19. _____
- 20. _____