SECTION 1.1
Points Satisfying an Equation
1. Determine whether the ordered pairs (9, -4), (6, -5), (3, -6), (24, -1/2) are solutions to \( \frac{1}{3}x - 2y = 12 \).
2. Determine whether the ordered pairs (2, \( \frac{2}{5} \)), (\( \frac{1}{3} \), -2 \( \frac{2}{5} \)), (1, -3), (2 \( \frac{1}{5} \), -\( \frac{1}{5} \)) are solutions to \( 4x - 3y = 10 \).
3. Determine whether the ordered pairs (-1, 3), (2, -2 \( \frac{2}{3} \)), (\( \frac{5}{2} \), -\( \frac{3}{2} \)), (-4, -8) are solutions to \( 2x^2 + 3y = 8 \).
4. Determine whether the ordered pairs (-3, 3), (-4, -4), (-6, -5), (-4, -\( \frac{2}{3} \)), (0) are solutions to \( 5|x| - y^2 = 4 \).
5. Determine whether the points (1, -1), (\( \frac{2}{3} \), \( \frac{1}{2} \)), (-8, 2), (-3, -3) are on the graph of \( \frac{3x}{y^2} = x + 2 \).
6. Determine whether the points (4, -2), (-3, -3), (\( \frac{3}{4} \), -\( \frac{1}{2} \)), (9, -5) are on the graph of \( 2x + 1 = 4 - 3y \).
7. Determine whether the points (-2, \( \frac{1}{3} \)), (3, 0), (2, -1), (\( \frac{5}{3} \) - 2) are on the graph of \( 3xy + 2 = 4y \).
8. Determine whether the points (6, 0), (-7, -2), (10, -4), (-6, -1) are on the graph of \( \frac{1}{2}x^2 - 2y^2 = 16 \).
9. Determine the values of \( a \) and \( b \) so that \((a, \frac{2}{3})\) and \((-2, b)\) are solutions to \( 3x - 12y = 10 \).
10. Determine the values of \( a \) and \( b \) so that \((a, -9)\) and \((-1, b)\) are solutions to \( \frac{3}{4}x + \frac{1}{5}y = \frac{1}{5} \).
11. Determine the values of \( a \) and \( b \) so that \((a, -3)\) and \((-3, b)\) are solutions to \( 2x^2 - 5y = 15 \).
12. Determine the values of \( a \) and \( b \) so that \((a, \frac{1}{2})\) and \((-1, b)\) are solutions to \( y - 2xy = x \).
13. Determine the values of \( a \) and \( b \) so that \((a, 3)\) and \((\frac{1}{2}, b)\) are points on the graph of \( \frac{4}{5} - 6y = 18 \).
14. Determine the values of \( a \) and \( b \) so that \((a, -2)\) and \((-2, b)\) are points on the graph of \( -5|x| - y^2 + 6 = 0 \).
15. Determine the values of \( a \) and \( b \) so that \((a, -6)\) and \((-6, b)\) are points on the graph of \( \frac{1}{2}x + \frac{1}{4}y^2 = 2 \).
16. Determine the values of \( a \) and \( b \) so that \((a, -1)\) and \((-2, b)\) are points on the graph of \( 0.4x - 3.2y = 5.6 \).

SECTION 1.1
The Graph of an Equation
1. Graph using at least six points:
   a. \( 3x - 2y = 6 \)
   b. \( y - 2|x| = 8 \)
   c. \( \frac{1}{2}y + 4 = 3x \)
   d. \( x^2 - 2y = 4 \)
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e. $2x - 4y^2 = 10$
f. $\frac{1}{2}y = x^3 - 2$

SECTION 1.1
Evaluating and Graphing Functions
1. Given $f(x) = -2x^2 + 3x - 5$, evaluate $f(-1), f(0), f(2)$.
2. Given $g(x) = -3|x| + 7x$, evaluate $g(-3), g(0), g(4)$.
3. Given $h(x) = x^3 - 2x + 1$, evaluate $h(-2), h(1), h(3)$.
4. Given $f(x) = \frac{15}{x+1}$, evaluate $f(-3), f(0), f(2)$.
5. Graph the following functions using at least 5 points.
   a. $f(x) = \frac{1}{2}x - 4$
   b. $g(x) = 5|x| - 6$
   c. $h(x) = x^2 - 3x - 4$
   d. $i(x) = x^3 - 10$

6. Determine the domain for the following functions.
   a. $f(x) = 2x^3 - 3x^2 + 5$
   b. $g(x) = \frac{|x|}{4}$
   c. $h(x) = 7$
   d. $i(x) = \frac{x^2}{x-1}$
SECTION 1.1
ANSWERS— Points Satisfying an Equation

1. (6, -5)
2. \((2\frac{1}{4}, -\frac{1}{3})\) and \((\frac{1}{2}, -2\frac{2}{3})\)
3. \((-4, -8)\) and \((\frac{5}{2}, -\frac{3}{2})\)
4. \((-4, -4)\) and \((-\frac{4}{5}, 0)\)
5. \((1, -1), (-8, 2)\) and \((-3, -3)\)
6. \((9, -5)\)
7. \((-2, \frac{1}{3}), (2, -1)\) and \((\frac{5}{3}, -2)\)
8. \((-6, -1)\)
9. \(a = 6, b = -\frac{4}{3}\)
10. \(a = \frac{20}{3}, b = \frac{5}{2}\)
11. \(a = 0, b = \frac{1}{5}\)
12. \(a = \frac{1}{4}, b = -\frac{1}{5}\)
13. \(a = \frac{1}{2}, b = -\frac{2}{3}\)
14. \(a = \frac{2}{5}\) or \(-\frac{2}{5}, b = \text{no solution}\)
15. \(a = -21, b = 4\) or \(-4\)
16. \(a = 6, b = -2\)

SECTION 1.1
ANSWERS—The Graph of an Equation

1a. \(3x - 2y = 6\), Solution is: \(\{y = \frac{3}{2}x - 3\}\)

b. \(y - 2|x| = 8\), Solution is: \(\{y = 2|x| + 8\}\)
c. $\frac{1}{2}y + 4 = 3x$, Solution is: $\{y = -8 + 6x\}$

d. $x^2 - 2y = 4$, Solution is: $\{y = \frac{1}{2}x^2 - 2\}$

e. $2x - 4y^2 = 10$, Solution is $\{y = -\frac{1}{2} \sqrt{(2x - 10)}, \frac{1}{2} \sqrt{(2x - 10)}\}$
f. \( \frac{1}{2}y = x^3 - 2 \), Solution is: \( \{ y = 2x^3 - 4 \} \)

SECTION 1.1
ANSWERS— Evaluating and Graphing Functions

1. \( f(-1) = -10 \)
   \( f(0) = -5 \)
   \( f(2) = -7 \)
2. \( g(-3) = -30 \)
   \( g(0) = 0 \)
   \( g(4) = 16 \)
3. \( h(-2) = -3 \)
   \( h(1) = 0 \)
   \( h(3) = 22 \)
4. \( f(-3) = -\frac{15}{2} \)
   \( f(0) = 15 \)
   \( f(2) = 5 \)
5. 
   a. \( f(x) = \frac{1}{2} x - 4 \)

   ![Graph of f(x)](image)

   b. \( g(x) = 5|x| - 6 \)

   ![Graph of g(x)](image)

   c. \( h(x) = x^2 - 3x - 4 \)

   ![Graph of h(x)](image)

   d. \( i(x) = x^3 - 10 \)
6.

a. all reals
b. all reals
c. all reals
d. all real numbers except 1