Worksheet 2.2-2.3   **Name** _____

Determine whether the equation defines y as a function of x.

1. $2x + 3y = 7$ 2. $5x + y = 8$ 3. $-x^2 + y^2 = 2$ 4. $x^2 - 2y = 2$

Evaluate each function.

5. Given $f(x) = 3x - 1$, find

   a. $f(2)$ b. $f(-1)$ c. $f(0)$ d. $f\left(\frac{2}{3}\right)$ e. $f(k)$ f. $f(k+2)$

6. Given $g(x) = 2x^2 + 3$, find

   a. $g(3)$ b. $g(-1)$ c. $g(0)$ d. $g\left(\frac{1}{2}\right)$ e. $g(c)$ f. $g(c+5)$

Determine the domain of the function represented by the given equation.

7. $f(x) = 3x - 4$ 8. $f(x) = x^2 + 2$ 9. $f(x) = \frac{4}{x+2}$ 10. $f(x) = \sqrt{7+x}$ 11. $f(x) = \sqrt{9-x^2}$

Find the value or values of a in the domain of f for which $f(a)$ equals the given number.

12. $f(x) = 3x - 2, f(a) = 10$ 13. $f(x) = x^2 + 2x - 2, f(a) = 1$

14. $f(x) = |x|, f(a) = 4$ 15. $f(x) = x^2 + 2, f(a) = 1$
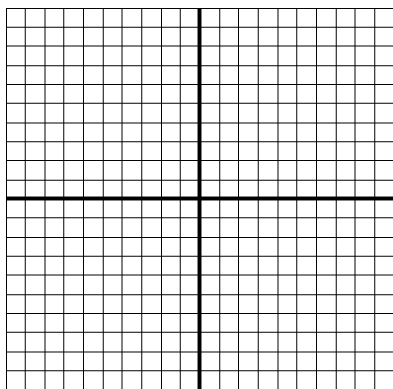
Find the zeros of f.

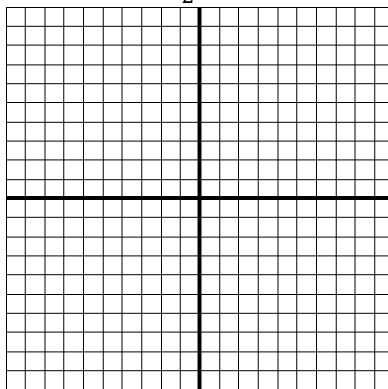16. $f(x) = 3x - 6$ 17. $f(x) = 5x + 2$ 18. $f(x) = x^2 - 4$ 19. $f(x) = x^2 - 5x - 24$
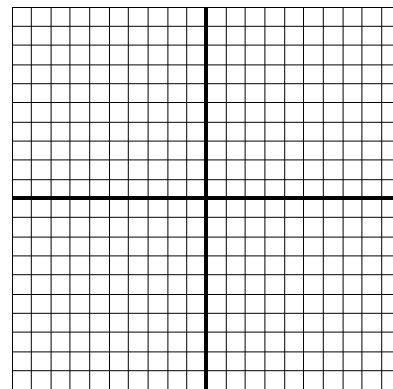
Graph each function.

20. $f(x) = 3x - 4$

21. $h(x) = -\frac{1}{2}x + 5$

22. $5x - 4y = 20$

Find the equation that satisfies the given conditions. Write the equation in slope-intercept form.

23. Through $(1, -1)$, slope 5   24. Through $(8, -2)$, slope $-\frac{3}{4}$ 25. Through $(-3, -7)$ and $(6, -1)$

Section 2.3 WS

1. The graph of a line with zero slope is _____.

2. The graph of a line whose slope is undefined is _____.

Determine whether the graphs of the two equations are parallel, perpendicular, or neither.
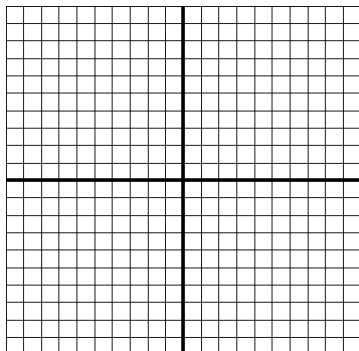
3. $y = 3x - 4, y = -3x + 2$

4. $y = -\frac{2}{3}x + 1, y = 2 - \frac{2x}{3}$
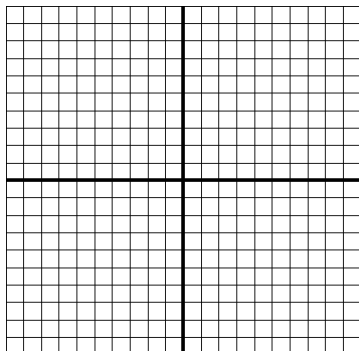
5. $f(x) = 3x - 1, y = -\frac{x}{3} - 1$

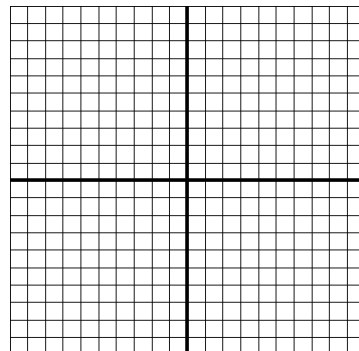6. $y = \frac{4x}{3} + 2, y = 2 - \frac{3}{4}x$
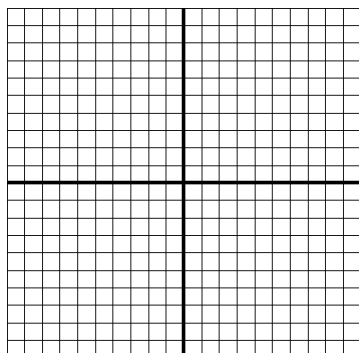
Graph the function.
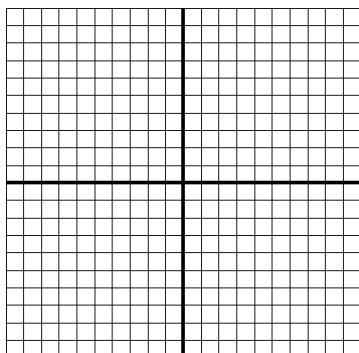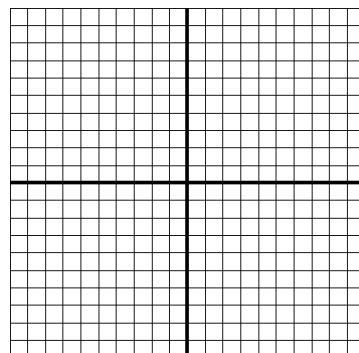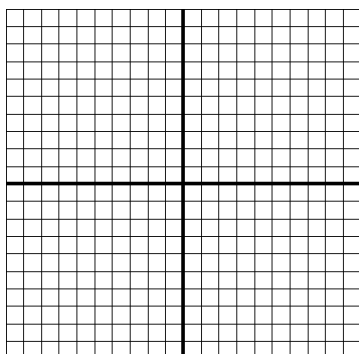
7. $y = 2x - 4$

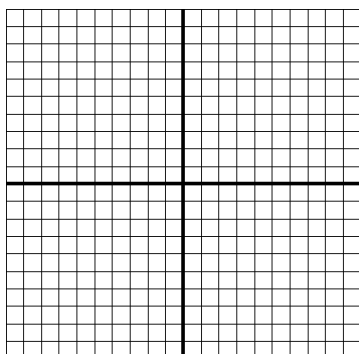8. $y = -\frac{3}{2}x + 4$

9. $y = 3$
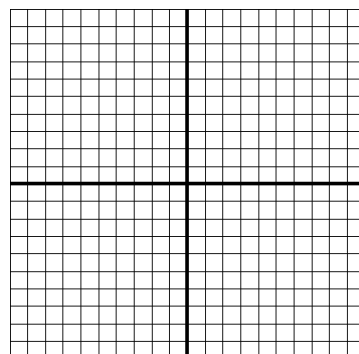
10. $y = x$

11. $2x - 5y = -15$

12. $x + 2y = 6$

13. $x = -4$

14. $2x + y = 5$

15. $y = -x + 1$

Write the equation of the line in slope-intercept form that satisfies the given conditions.

16. Through $(-3,2)$, slope -4

17. Through $(1,1)$, slope 4

18. Through $(-6,2)$, slope $\frac{2}{3}$

19. Through $(8, -1)$ and $(-4,2)$

20. Through $(-2,1)$ and $(5,1)$

21. Through $(1, -3)$ and $(-1, -9)$

22. The graph is parallel to the graph of $y = \frac{2}{3}x - 1$ and passes through the point whose coordinates are $(-3, -1)$.

23. The graph is parallel to the graph of $2x - 5y = 2$ and passes through the point whose coordinates are $(5, 2)$.

24. The graph is perpendicular to the graph of $y = -x + 3$ and passes through the point whose coordinates are $(-5, 2)$.

25. The graph is perpendicular to the graph of $3x - 2y = 5$ and passes through the point whose coordinates are $(-3, 4)$.