

$\sqrt{13}$ 1)

Find the distance between the points $(-1, 5)$ and $(-3, 2)$

$$d = \sqrt{(-1+3)^2 + (5-2)^2} = \sqrt{2^2 + 3^2} =$$

$(-\frac{7}{2}, -\frac{1}{2})$ 2)

Find the midpoint between the points $(-4, 2)$ and $(-3, -3)$

$$(\frac{-4+-3}{2}, \frac{2-3}{2})$$

$y = 6, -4$ 3)

Find y such that the distance between the points $(5, 1)$ and $(5, y)$ is 5.

$$\sqrt{(5-5)^2 + (y-1)^2} = 5$$

$$(y-1)^2 = 25$$

$$y-1 = \pm 5$$

$$y = 1 \pm 5$$

$(-4, 0)$ 4)

Find the x-intercept of the graph of $y^2 - 4 = x$.

$$0 - 4 = x$$

$(0, -3)$ 5)

Find the y-intercept of the graph of $y = x^2 - 2x - 3$.

$(x-1)^2 + (y+8)^2 = 5$ 6)

Write the graphing form of the equation of a circle if the center is $(1, -8)$ and the radius is $\sqrt{5}$

$$(x-1)^2 + (y+8)^2 = (\sqrt{5})^2$$

$(x+2)^2 + y^2 = 9$ 7)

Write the graphing form of the equation of a circle if the center is $(-2, 0)$ and the radius is 3

$(x-1)^2 + (y+3)^2 = 25$ 8)

Complete the square to find the graphing form of the given circle

$$x^2 + y^2 - 2x + 6y - 15 = 0$$

$$x^2 - 2x + 1 + y^2 + 6y + 9 = 15 + 1 + 9$$

$$(x-1)^2 + (y+3)^2 = 25$$

$(5, 2)$ 9)

Find the points of intersection (if any) of the graphs of the equations. $x + y = 7$, $3x - 2y = 11$

$$5x = 25$$

$$y = -x + 7$$

$$x = 5$$

$$3x - 2(-x + 7) = 11$$

$$3x + 2x - 14 = 11$$

$$(2, 1) \quad (-1, -2) \quad 10)$$

Find the points of intersection (if any) of the graphs of the equations. $x - y = 1$, $x^2 - y = 3$

$$y = x - 1$$

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

$$x^2 - (x - 1) = 3$$

$$x^2 - x - 2 = 0$$

$$(x - 2)(x + 1) = 0$$

$$y - 3 = -1(x - 5) \quad 11)$$

$$y - 2 = -1(x - 6)$$

Find the slope of the line passing through the points (5, 3) and (6, 2).

$$m = \frac{3 - 2}{5 - 6} = -1$$

$$m = -1$$

$$y - 3 = \frac{4}{3}(x - 5) \quad 12)$$

Find the equation of the line with slope of $\frac{4}{3}$ passing through the point (5, 3).

$$y - 3 = \frac{4}{3}x - \frac{20}{3} + \frac{9}{3}$$

$$y = \frac{4}{3}x - \frac{11}{3}$$

$$y = 3 \quad 13)$$

Write an equation of the horizontal line with y-intercept at 3

$$y - 6 = -\frac{2}{3}(x - 3) \quad 14)$$

Write the equation of the line perpendicular to $3x - 2y = 4$ and passing through the point (3, 6).

$$m = \frac{3}{2} \perp m = -\frac{2}{3}$$

$$2y = 3x - 4$$

$$y = \frac{3}{2}x - 2$$

$$y - 6 = -\frac{2}{3}x + 2$$

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

$$y + 1 = -\frac{1}{3}(x - 4) \quad 15)$$

Write the equation of the line parallel to the line $x + 3y = 2$ and passing through the point (4, -1).

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

$$3y = -x + 2$$

$$m = -\frac{1}{3} \parallel m = -\frac{1}{3}$$

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

$$y + 1 = -\frac{1}{3}x + \frac{4}{3} - \frac{2}{3}$$

$$y - 4 = -\frac{9}{4}(x - 3)$$

$$y + 5 = -\frac{9}{4}(x - 7) \quad 16)$$

Write the equation of the line passing through the points (3, 4) and (7, -5)

$$y = -\frac{9}{4}x + \frac{43}{4}$$

(3, 4) and (7, -5)

$$m = \frac{-5 - 4}{7 - 3}$$

$$= -\frac{9}{4}$$

$$y - 4 = -\frac{9}{4}x + \frac{27}{4} + \frac{16}{4}$$

$$+ 4$$

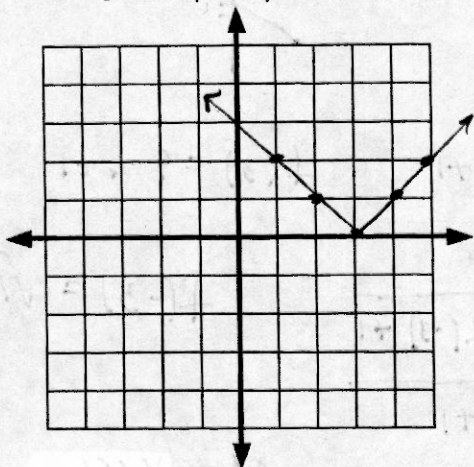
$$x = -3 \quad 16)$$

Write the equation of the line passing through the points (-3, 6) and (-3, 2)

Graph the following functions.

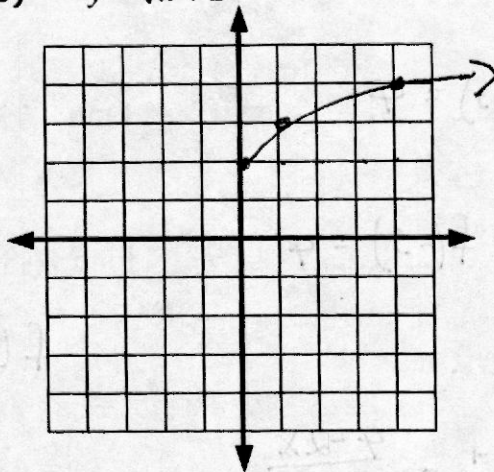
25)

$$f(x) = |x - 3|$$



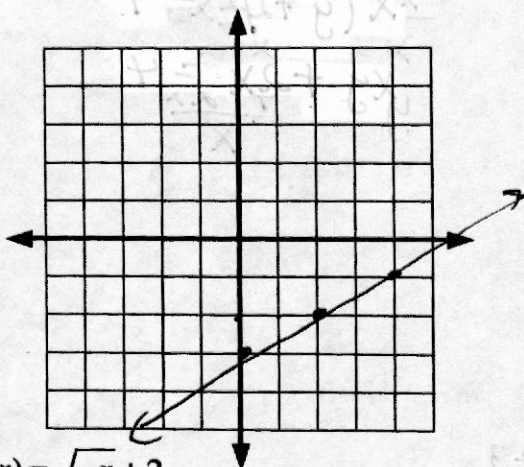
26)

$$y = \sqrt{x} + 2$$



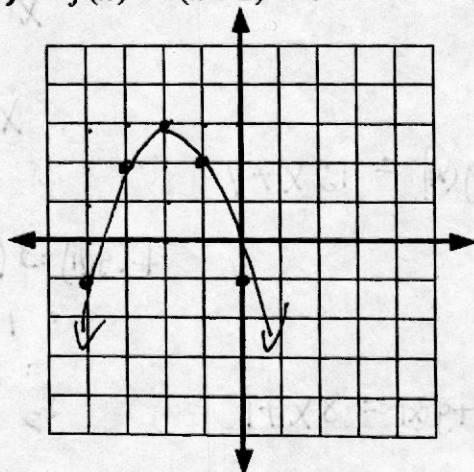
27)

$$f(x) = \frac{1}{2}x - 3$$



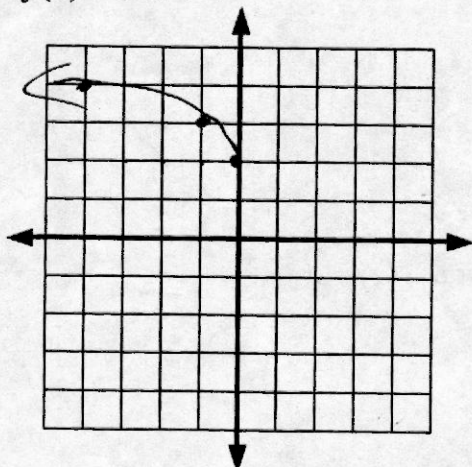
28)

$$f(x) = -(x + 2)^2 + 3$$



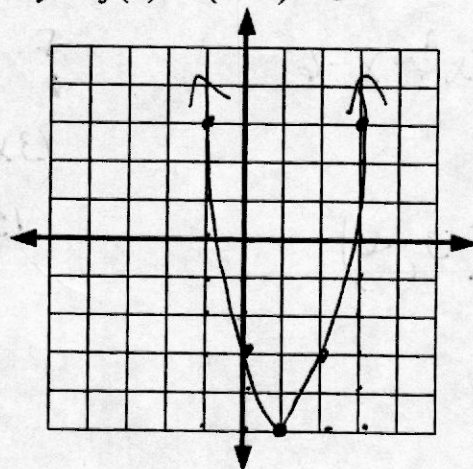
29)

$$f(x) = \sqrt{-x} + 2$$



30)

$$f(x) = 2(x - 1)^2 - 5$$



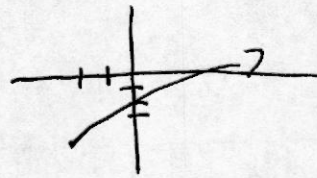
26, 27, 29

31)

Which function(s) is/are a one-to-one function?

$[-3, \infty)$ 17)

What is the range for the function $f(x) = \sqrt{x+2} - 3$



$f(3) = 4$ 18)

Find $f(3)$ if $f(x) = x^2 - 2x + 1$

$$f(3) = 3^2 - 2 \cdot 3 + 1$$

$$f(3) = 9 - 6 + 1$$

$f(-3) = 4$ 19)

Find $f(-3)$ if $f(x) = \sqrt{x^2 - 2x + 1}$

$$\begin{aligned} f(-3) &= \sqrt{(-3)^2 - 2(-3) + 1} \\ &= \sqrt{9 + 6 + 1} \end{aligned}$$

$$f(-3) = \sqrt{16}$$

$f(x) = \frac{4-2x}{x}$ 20)

Find the inverse function for $f(x) = \frac{4}{x+2}$

$$x = \frac{4}{y+2}$$

$$\frac{xy}{x} = \frac{4-2x}{x}$$

$$xy + 2x = 4$$

$$y = \frac{4-2x}{x}$$

$f(g(x)) = 15x + 7$ 21)

Find $f \circ g(x)$ if $f(x) = 3x + 1$ and $g(x) = 5x + 2$

$$\begin{aligned} f(g(x)) &= 3(5x+2) + 1 \\ &= 15x + 6 + 1 \\ &= 15x + 7 \end{aligned}$$

$f(x) + g(x) = 8x + 1$ 22)

If $f(x) = 3x - 2$ and $g(x) = 5x + 3$, find $f(x) + g(x)$

$$3x - 2 + 5x + 3$$

$f \cdot g = 15x^2 - x - 6$ 23)

If $f(x) = 3x - 2$ and $g(x) = 5x + 3$ find $f(x) \cdot g(x)$

$$(3x - 2)(5x + 3)$$

$$15x^2 + 9x - 10x - 6$$

$[3, \infty)$ 24)

Give the domain for the function $f(x) = \sqrt{x-3}$