

2.1 Practice Solutions

Directions: Convert from a (x, y) coordinate point to function notation.

1) (3, -4) $f(3) = -4$

2) (-5, 6) $f(-5) = 6$

3) (0, 5) $f(0) = 5$

4) (-6, 0) $f(-6) = 0$

5) Directions: Plot each point. Label with each letter.

A - $f(2) = 5$ (2, 5)

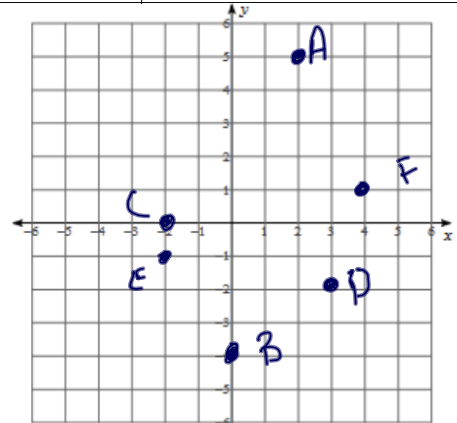
B - $f(0) = -4$ (0, -4)

C - $f(-2) = 0$ (-2, 0)

D - $f(3) = -2$ (3, -2)

E - $f(-2) = -1$ (-2, -1)

F - $f(4) = 1$ (4, 1)



Directions: Evaluate or find the solution. Express your answer in function notation.

6) $g(x) = -2x + 5$; Find $g(-5)$

$$g(-5) = -2(-5) + 5$$

$$= 10 + 5$$

$$g(-5) = 15$$

7) $h(z) = |-x - 3| + 1$; Find $h(z) = 3$

$$3 = |-x - 3| + 1$$

$$-1 = -x - 3$$

$$2 = |-x - 3|$$

$$2 = -x - 3 \quad \text{or} \quad -2 = -x - 3$$

$$\frac{2}{-1} = \frac{-x-3}{-1} \quad \frac{-2}{-1} = \frac{-x-3}{-1}$$

$$-2 = -x - 3 \quad 1 = -x$$

$$-5 = x \quad -1 = x$$

$$f(-5) = 3 \quad \text{or} \quad f(-1) = 3$$

8) $b(n) = 2n^3 - 4$; find $b(-4)$

$$b(-4) = 2(-4)^3 - 4$$

$$= 2(-64) - 4$$

$$= -128 - 4$$

$$b(-4) = -132$$

9) $f(x) = 2x - 5$; Find $f(x) = -3$

$$-3 = 2x - 5$$

$$+5 \quad +5$$

$$\frac{2}{2} = \frac{2x}{2}$$

$$1 = x$$

$$f(1) = -3$$

10) $g(u) = u^2 - 5u$; Find $g(u) = 104$

$$104 = u^2 - 5u$$

$$0 = u^2 - 5u - 104$$

$$0 = (u - 13)(u + 8)$$

$$u - 13 = 0 \quad \text{or} \quad u + 8 = 0$$

$$u = 13 \quad \text{or} \quad u = -8$$

$$g(13) = 104 \quad \text{or} \quad g(-8) = 104$$

11) $j(x) = -3\sqrt{3x}$; Find $j(30)$

$$j(30) = -3\sqrt{3(30)}$$

$$= -3\sqrt{90}$$

$$= -3\sqrt{9}\sqrt{10}$$

$$= -3 \cdot 3\sqrt{10}$$

$$j(30) = -9\sqrt{10}$$

12) $h(n) = 3|2n - 15| + 1$; Find $h(4)$

$$\begin{aligned} h(4) &= 3|2(4) - 15| + 1 \\ &= 3|8 - 15| + 1 \\ &= 3|-7| + 1 \\ &= 3(7) + 1 \\ &= 21 + 1 \end{aligned}$$

$$h(4) = 22$$

13) $f(x) = 2x^2 - 3x + 4$; Find $f(-3)$

$$\begin{aligned} f(-3) &= 2(-3)^2 - 3(-3) + 4 \\ &= 2(9) + 9 + 4 \\ &= 18 + 13 \end{aligned}$$

$$f(-3) = 31$$

14) $b(n) = -2|n - 2|$; Find $b(n) = -44$

$$\begin{aligned} -44 &= -2|n - 2| \\ \frac{-44}{-2} &= \frac{-2|n - 2|}{-2} \\ 22 &= |n - 2| \end{aligned}$$

$$\begin{aligned} 22 &= n - 2 \quad \text{or} \quad -22 = n - 2 \\ 24 &= n \quad \text{or} \quad -20 = n \end{aligned}$$

$$b(24) = -44 \quad \text{or} \quad b(-20) = -44$$

15) $h(x) = \frac{2x-5}{3x}$; Find $h(-5)$

$$\begin{aligned} h(-5) &= \frac{2(-5) - 5}{3(-5)} \\ &= \frac{-10 - 5}{-15} \\ &= \frac{-15}{-15} \end{aligned}$$

$$h(-5) = 1$$

16) $f(m) = m^2 + 17m$; Find $f(m) = -60$

$$\begin{aligned} -60 &= m^2 + 17m \\ 0 &= m^2 + 17m + 60 \\ 0 &= (m + 12)(m + 5) \\ m + 12 &= 0 \quad \text{or} \quad m + 5 = 0 \\ m &= -12 \quad \text{or} \quad m = -5 \end{aligned}$$

$$f(-12) = -60 \quad \text{or} \quad f(-5) = -60$$

17) $f(l) = 2\sqrt{3l} + 3\sqrt{4l}$; Find $f(27)$

$$\begin{aligned} f(27) &= 2\sqrt{3(27)} + 3\sqrt{4(27)} \\ &= 2\sqrt{81} + 3\sqrt{108} \\ &= 2 \cdot 9 + 3\sqrt{36\sqrt{3}} \\ &= 18 + 3 \cdot 6\sqrt{3} \end{aligned}$$

$$f(27) = 18 + 18\sqrt{3}$$