

Function Equations  
Function Notation

$$f(x) = x + 4$$

input  $\swarrow$  makes the output

2-4  
~~2-4~~

$$f(x) = 2x - 5 \text{ Find } f(4)$$

$$f(4) = 2(4) - 5$$

$$f(4) = 8 - 5$$

$$f(4) = 3$$

Find  $f(-3)$

$$f(-3) = 2(-3) - 5$$

$$f(-3) = -6 - 5$$

$$f(-3) = -11$$

$$f(x) = x^2 - 4 \text{ Find } f(5)$$

$$f(5) = (5)^2 - 4$$

$$25 - 4$$

$$19$$

Find  $f(-4)$

$$f(-4) = (-4)^2 - 4$$

$$16 - 4$$

$$f(-4) = 12$$

$$f(x) = |x - 3| + 1 \text{ find } f(-3)$$

$$f(-3) = |-3 - 3| + 1$$

$$|-6| + 1$$

$$6 + 1$$

$$f(-3) = 7$$

find  $f(12)$

$$f(12) = |12 - 3| + 1$$

$$|9| + 1$$

$$9 + 1$$

$$f(12) = 10$$

$$f(x) = -3x - 10 \text{ find } f(-5)$$

$$f(-5) = -3(-5) - 10$$

$$15 - 10$$

$$f(-5) = 5$$

find  $f(7)$

$$f(7) = -3(7) - 10$$

$$-21 - 10$$

$$f(7) = -31$$

*Standard H.2A.5.C3: I can solve equations in function notation*

**Directions: Solve each function for the requested value.**

1. Let  $g(x) = x^2 - 5x + 2$ . Find the following:

a.  $g(-1)$

b.  $g(-2)$

c.  $g(0)$

d.  $g(5)$

2. Let  $f(x) = 2x^2 + 2$ . Find each of the following:

a.  $f(-3)$

b.  $f(6)$

c.  $f(-1)$

d.  $f(4)$

3. Let  $g(x) = x^2 + 4x - 1$ . Find the following:

a.  $g(-4)$

b.  $g(8)$

c.  $g(-1)$

d.  $g(1)$

4. Let  $f(x) = 3x^2 - 5x$ . Find each of the following:

a.  $f(2)$

b.  $f(-8)$

c.  $f(7)$

d.  $f(-1)$

Standard H.2A.5.C3: I can solve equations in function notation

Directions: Solve each function for the requested value.

1. Let  $g(x) = x^2 - 5x + 2$ . Find the following:

a.  $g(-1)$

$$\begin{aligned} g(-1) &= (-1)^2 - 5(-1) + 2 \\ &= 1 + 5 + 2 \\ &= 8 \end{aligned}$$

b.  $g(-2)$

$$\begin{aligned} g(-2) &= (-2)^2 - 5(-2) + 2 \\ &= 4 + 10 + 2 \\ &= 16 \end{aligned}$$

c.  $g(0)$

$$\begin{aligned} g(0) &= 0^2 - 5(0) + 2 \\ &= 0 - 0 + 2 \\ &= 2 \end{aligned}$$

d.  $g(5) = 5^2 - 5(5) + 2$

$$\begin{aligned} &= 25 - 25 + 2 \\ &= 2 \end{aligned}$$

2. Let  $f(x) = 2x^2 + 2$ . Find each of the following:

a.  $f(-3) = 2(-3)^2 + 2$

$$\begin{aligned} &= 2(9) + 2 \\ &= 18 + 2 \\ &= 20 \end{aligned}$$

b.  $f(6) = 2(6)^2 + 2$

$$\begin{aligned} &= 2(36) + 2 \\ &= 72 + 2 \\ &= 74 \end{aligned}$$

c.  $f(-1) = 2(-1)^2 + 2$

$$\begin{aligned} &= 2(1) + 2 \\ &= 4 \end{aligned}$$

d.  $f(4) = 2(4)^2 + 2$

$$\begin{aligned} &= 2(16) + 2 \\ &= 32 + 2 \\ &= 34 \end{aligned}$$

3. Let  $g(x) = x^2 + 4x - 1$ . Find the following:

a.  $g(-4) = (-4)^2 + 4(-4) - 1$

$$\begin{aligned} &= 16 - 16 - 1 \\ &= -1 \end{aligned}$$

b.  $g(8) = 8^2 + 4(8) - 1$

$$\begin{aligned} &= 64 + 32 - 1 \\ &= 95 \end{aligned}$$

c.  $g(-1) = (-1)^2 + 4(-1) - 1$

$$\begin{aligned} &= 1 - 4 - 1 \\ &= -4 \end{aligned}$$

d.  $g(1) = 1^2 + 4(1) - 1$

$$\begin{aligned} &= 1 + 4 - 1 \\ &= 5 - 1 \\ &= 4 \end{aligned}$$

4. Let  $f(x) = 3x^2 - 5x$ . Find each of the following:

a.  $f(2) = 3(2)^2 - 5(2)$

$$\begin{aligned} &= 3(4) - 10 \\ &= 12 - 10 \\ &= 2 \end{aligned}$$

b.  $f(-8) = 3(-8)^2 - 5(-8)$

$$\begin{aligned} &= 3(64) + 40 \\ &= 192 + 40 \\ &= 232 \end{aligned}$$

c.  $f(7) = 3(7)^2 - 5(7)$

$$\begin{aligned} &= 3(49) - 35 \\ &= 147 - 35 \\ &= 112 \end{aligned}$$

d.  $f(-1) = 3(-1)^2 - 5(-1)$

$$\begin{aligned} &= 3(1) + 5 \\ &= 3 + 5 \\ &= 8 \end{aligned}$$