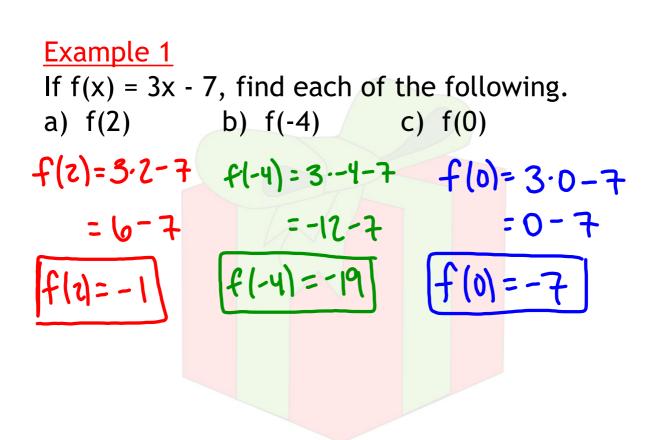## 9.1 Part 2 Describe Relationships

Equations that represent functions can be written in <u>function notation</u>. The equation y = 2x + 1 can be written f(x) = 2x + 1. The symbol f(x) is read "f of x".

f(x) does NOT represent multiplication!

If you see f(3), that means you are plugging the value 3 in for x.

<u>Example 1</u>

If f(x) = 3x - 7, find each of the following.

a) f(2)   b) f(-4)   c) f(0)

$f(2) = 3 \cdot 2 - 7$ $f(-4) = 3 \cdot -4 - 7$ $f(0) = 3 \cdot 0 - 7$

$= 6 - 7$ $= -12 - 7$ $= 0 - 7$

$\boxed{f(2) = -1}$ $\boxed{f(-4) = -19}$ $\boxed{f(0) = -7}$

Example 2

If $h(x) = -x + 8$, find each of the following.

a) $h(-9)$ b) $h(6)$ c) $h(-1)$

$h(-9) = -(-9) + 8$

$= 9 + 8$

$\boxed{h(-9) = 17}$

$h(6) = -(6) + 8$

$= -6 + 8$

$\boxed{h(-6) = 2}$

$h(-1) = -(-1) + 8$

$= 1 + 8$

$\boxed{h(-1) = 9}$

Example 3

If $k(x) = x^2 + 4$, evaluate the function when

① $x = 2$, ② $x = 0$, ③ $x = -3$.

① $x = 2$

$k(2) = 2^2 + 4$

$= 4 + 4$

$\boxed{k(2) = 8}$

② $x = 0$

$k(0) = 0^2 + 4$

$= 0 + 4$

$\boxed{k(0) = 4}$

③ $x = -3$

$k(-3) = (-3)^2 + 4$

$= 9 + 4$

$\boxed{k(-3) = 13}$