Evaluating Functions

We can evaluate functions by plugging in the input values (x-values) to get our output values (y-values).

Ex) $y = -2x + 9$ $x = -3$

$x = -4$ $y = -2(3) + 9$

$f(x) = 7$ $y = 6 + 9$

$y = 3$

$y = -2(-4) + 9$

$y = 8 + 9$

$y = 17$

$7 = -2x + 9$

$-9 \quad -9$

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

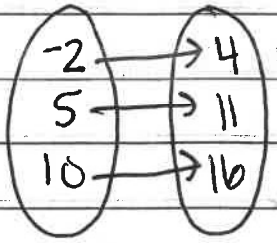
What does f(x) represent.

f(x) is a function notation which is a fancy way to say "y"

f(x) can also be written as any variable, g(x), h(x), f(n), etc.

The variable in the parenthese is the input.

Ex) Complete the Mapping Diagram



$f(x) = x + 6$

$f(-2) = -2 + 6 = 4$

$f(5) = 5 + 6 = 11$

$f(10) = 10 + 6 = 16$

Ex) Find the missing value of the ordered pair.

$$f(x) = 3x + 1$$

$\{(0, ?)\ (?, 7)\ (?, 13)\}$

$(0, 1)$ $(2, 7)$ $(4, 13)$

$f(0) = 3(0) + 1 = 1$

$7 = 3x + 1$

$-1 \quad -1$

$\frac{6}{3} = \frac{3x}{3}$ $\quad x = 2$

$13 = 3x + 1$

$-1 \quad -1$

$\frac{12}{3} = \frac{3x}{3}$ $\quad x = 4$