

4.2 Guided Notes

Evaluating using Function Notation

Evaluate $y = -3x + 1$ for $x = 2$.

$$y = (-3 \cdot 2) + 1$$

$$y = -6 + 1$$

$$y = -5$$

P
E
M
D
A
S

Find $f(2)$ when $f(x) = -3x + 1$.

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

$$f(2) = -6 + 1$$

$$f(2) = -5$$

$\begin{pmatrix} x & y \\ 2 & -5 \end{pmatrix}$

ordered pair $(2, -5)$ $f(x)$ is a synonym for y . $f(x)$ is read f of x . f is the $output$ of the function, not a variable.

We all mean the same!

$$y = x^2 + 7$$

$$f(x) = x^2 + 7$$

$f(x) =$ function notation
 $y =$ equation

Examples

1) Rewrite using function notation:

a) $y = 6x$

$$f(x) = 6x$$

b) $7 + x^2 = y$

$$7 + x^2 = f(x)$$

2) Evaluate.

a) Find $f(3)$ when $f(x) = \frac{18}{x+3}$.

$$f(3) = \frac{18}{3+3} = \frac{18}{6}$$

$$f(3) = 3$$

$\begin{pmatrix} x & y \\ 3 & 3 \end{pmatrix}$

b) Find $f(-4)$ when $f(x) = -x^2 + 9$

$$f(-4) = -(4)^2 + 9$$

$$f(-4) = -16 + 9$$

$$f(-4) = -7$$

$\begin{pmatrix} x & y \\ -4 & -7 \end{pmatrix}$