C12 - 10.1 - Function Notation Notes

$$\boxed{y = f(x) = y}$$

$\boxed{f(x) = x + 2}$

$$y = x + 2$$
$$y(3) = 3 + 2$$

$f(3) = ?$ $(3, y)$ *What is y when x is 3. Put 3 in for x.*

$f(x) = x + 2$
$f(3) = 3 + 2$ *Put whatever is inside the brackets in for x.*
$f(3) = 5$ $(3,5)$

x	y
3	5

$f(x) = x + 2$

$f(x) = 6$ $(x, 6)$ *What is x when y is 6. Put 6 in for $f(x)$.* $x = ?$

$$y = x + 2$$
$$6 = x + 2$$
$$-2 \quad -2$$
$$4 = x$$
$$x = 4$$

$f(x) = x + 2$ *Put whatever $f(x)$ is equal to in for $f(x)$.*
$\quad 6 = x + 2$
$-2 \quad\quad -2$
$\quad 4 = x$
$\quad x = 4$ $(4,6)$

x	y
4	6

$f(x + 5) = ?$ $f(3x) = ?$

$\quad\quad f(x) = x + 2$
$f(x + 5) = (x + 5) + 2$ *Put $x + 5$ in for f's x*
$f(x + 5) = x + 7$

$\quad\quad f(x) = x + 2$
$f(3x) = (3x) + 2$ *Put $3x$ in for f's x*
$f(3x) = 3x + 2$

$\boxed{\begin{array}{l} f(x) \text{ does not mean } f \times x \\ f(x) \text{ is one thing} \\ We\ dont\ divide\ by\ any\ part\ of\ f(x)\ or\ f(\#) \\ Cant\ Distribute/Factor\ in/out\ of\ a\ function\ f(x) \end{array}}$