

4.3

# FUNCTIONS

Independent variable

(Independent) = (Input)

- Input  
(can change)
- x values

Dependent variable

Depends on the independent

- output
- y values

(same)

$$y = mx \wedge f(x) = mx$$

Example function

Find  $f(3)$  if  $f(x) = 2x + 1$

$$y = 2x + 1$$

(same)

$$f(3) = 2(3) + 1$$

$$f(3) = 6 + 1$$

$$f(3) = 7$$

x	$2x + 1$	Y
3	$2(3) + 1$	7
-1	$2(-1) + 1$	-1

Find  $f(-2)$  if  $f(x) = 3x + 4$

$$\begin{aligned} f(-2) &= 3(-2) + 4 \\ &= -6 + 4 \\ f(-2) &= -2 \end{aligned}$$

ANS:

$$f(-2) = -2$$

x	$3x+4$	Y
-2	$3(-2)+4$	-2

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

$$f(2) = \frac{2+7}{9}$$
ANS:  $f(2) = 9$

## Function machines

aka Function Table

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

Domain

X	$3x - 1$	$f(x)$
-1	$3(-1) - 1$	-4
0	$3(0) - 1$	-1
1	$3(1) - 1$	2
2	$3(2) - 1$	5

Range

Same as Y

$$-3 - 1 = -4$$

$$0 - 1 = -1$$

$$3 - 1 = 2$$

$$6 - 1 = 5$$