

9/28 Algebra 1 - Downing

Function Notation

Dependent Variable depends on Independent Variable

y depends on x

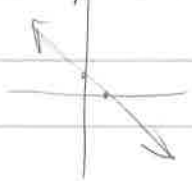
y is a function of x

$$y = f(x)$$

* y and $f(x)$ are the same thing

* can also use $g(x)$

Graph on TV



$$f(-3) = 4$$

$$f(1) = 0$$

$$f(-2) = 3$$

$$x \text{ if } f(x) = -5 \quad x = -6$$

$$x \text{ if } f(x) = 2 \quad x = -1$$

Use this Graph \rightarrow

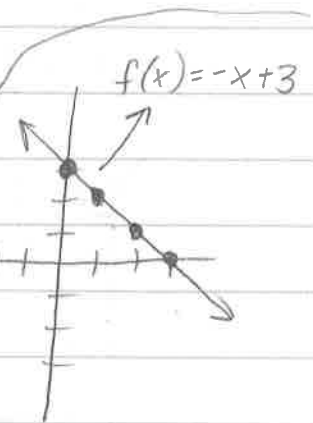
$$\text{Find } f(0) = 3$$

$$f(2) = 1$$

$$f(3) = 0$$

$$\text{Find } x \text{ when } f(x) = 2 \quad x = 1$$

$$x \text{ when } f(x) = 4 \quad x = -1$$



Evaluate $f(x) = -4x + 7$ when $x = 2$ and $x = -2$

$$f(2) = -4(2) + 7$$

$$f(2) = -8 + 7$$

$$f(2) = -1$$

$$(2, -1)$$

$$f(-2) = -4(-2) + 7$$

$$f(-2) = 8 + 7$$

$$f(-2) = 15$$

$$(-2, 15)$$

$f(x) = 3x + 2$ and $g(x) = 6x - 5$ evaluate the following

1. $f(2) = 3(2) + 2$ 2. $g(-3) = 6(-3) - 5$ 6) $g(3) = f(2)$

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

$$f(2) = 8$$

$$(2, 8)$$

$$g(-3) = -18 - 5$$

$$g(-3) = -23$$

$$(-3, -23)$$

$$g(3) = 6(3) - 5$$

$$g(3) = 18 - 5$$

$$g(3) = 13$$

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

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

$$f(2) = 8$$

5

(cont) $f(x) = 3x + 2$ and $g(x) = 6x - 5$

4) $3 \cdot g(5)$
 $3 \cdot 6(5) - 5$
 $3 \cdot 30 - 5$
 $3 \cdot 25$
 $= 75$

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

5) $f(-1) + g(-4)$
 $3(-1) + 2$ $6(-4) - 5$
 $-3 + 2$ $-24 - 5$
 -1 $+ -29$
 -30

Ex) Find x when $f(x) = 14$

$(4, 14)$

$f(x) = 3x + 2$

$14 = 3x + 2$

$\frac{-2}{-2} \quad \frac{-2}{-2}$
 $\frac{12}{3} = \frac{3x}{3}$

$4 = x$

Ex) Find x when $g(x) = 25$

$(5, 25)$

$g(x) = 6x - 5$

$25 = 6x - 5$

$\frac{+5}{+5} \quad \frac{+5}{+5}$
 $\frac{30}{6} = \frac{6x}{6}$

$5 = x$

Literal Equations

Ex) Solve for h $\frac{A = bh}{b}$

$\frac{A}{b} = h$

Ex) Solve for L $P = 2L + 2W$

$\frac{P - 2W}{2} = \frac{2L}{2}$

$\frac{P}{2} - W = L$

Ex) Solve for x

$-2x + 7y = 10$
 $\frac{-7y}{-7} \quad \frac{-7y}{-7}$

$\frac{-2x}{-2} = \frac{10 - 7y}{-2}$

$x = -5 + \frac{7y}{2}$

$x = \frac{7y}{2} - 5$

Ex) Solve for y $6y + 3x = 12$

$\frac{6y}{6} = \frac{-3x + 12}{6}$

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

Solve for y

Ex) $-4x - 6y = 18$

$\frac{-6y}{-6} = \frac{4x + 18}{-6}$

$y = -\frac{2}{3}x - 3$

Ex) $y - 4 = 3(x - 2)$
 $\frac{y - 4}{+4} = \frac{3x - 6}{+4}$

$y = 3x - 2$

HW - Function Notation Worksheet