Function Notation

Wednesday, April 24, 2019 12:28 PM

$y = 2x + 3$ (rule)

output # ← y ; x ← input #

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

reads as "f of x" means a function with a input value of x.

x = input #

$f(x)$ = output #

find $f(4)$ for $f(x) = 2x + 3$

$f(4) = 2(4) + 3$

$f(4) = 11$ → write this an ordered pair $(4, 11)$

find the value of the function when x is 4

For $f(x) = 3x - 4$ find $f(-2)$ and $f(4)$ then write your answers as ordered pair.

$f(-2) = 3(-2) - 4$

$f(-2) = -10$

$(-2, -10)$

$f(4) = 3(4) - 4$

$f(4) = 8$

$(4, 8)$

ordered pairs (input #, output #)

(x, y)

find $f(2x)$ for $f(x) = -2x + 3$

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

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

find $f(x+3)$ for $f(x) = -2x + 3$

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

$f(x+3) = -2x - 6 + 3$

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

Try For $f(x) = 4x - 5$ find $f(3x) + f(2x+1)$

$f(3x) = 4(3x) - 5$

$f(3x) = 12x - 5$

$f(2x+1) = 4(2x+1) - 5$

$= 8x + 4 - 5$

$f(2x+1) = 8x - 1$

$f(x) = 3x + 5$

$f(x) = -1$, find x

$-1 = 3x + 5$ solve for x

$-5 \quad -5$

$\frac{-6}{3} = \frac{3x}{3}$

$-2 = x$

$f(-2) = -1$

$(-2, -1)$

$f(x) = \frac{1}{2}x - 3$ if $f(x) = -1$, find x

$-1 = \frac{1}{2}x - 3$

$+3 \quad +3$

$2(2) = 2\left(\frac{1}{2}x\right)$

$4 = x$

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

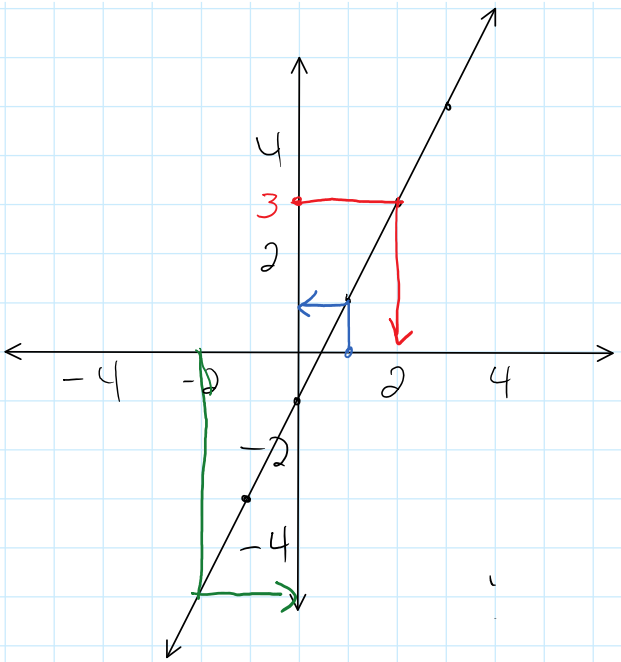
Try $f(x) = \frac{1}{2}x + 4$ if $f(x) = 6$, find x

$6 = \frac{1}{2}x + 4$

$-4 \quad -4$

$2(2) = 2\left(\frac{1}{2}x\right)$

$4 = x$



For the function to the left

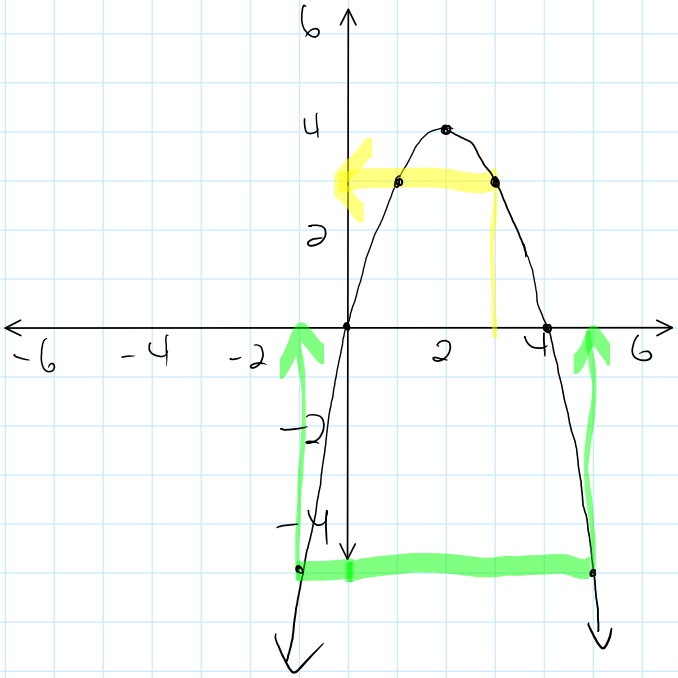
a) find $f(1)$ – what is the output value for an input value of 1.

$f(1) = 1$

b) find $f(-2) = -5$

c) find x when $f(x)=3$ (y-value)

$x = 2$.



a) Find $f(3) = 3$

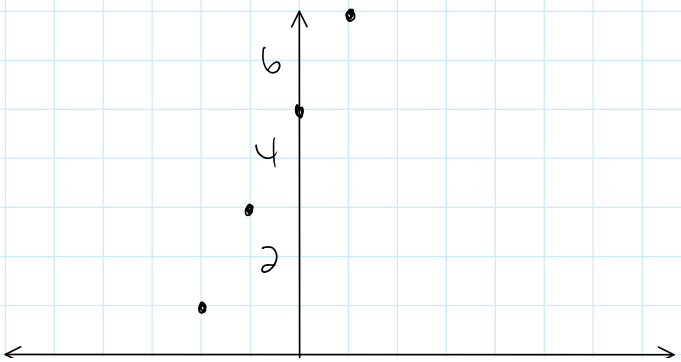
b) Find x when $f(x)=-5$

$x = -1$ or 5

Eg $f(x) = 2x + 5$ Domain is $\{-3, -2, -1, 0, 1\}$

Make a table of values + graph the function

x	$f(x)$	
-3	-1	$(-3,-1)$
-2	1	$(-2,1)$
-1	3	$(-1,3)$
0	5	$(0,5)$
1	7	$(1,7)$



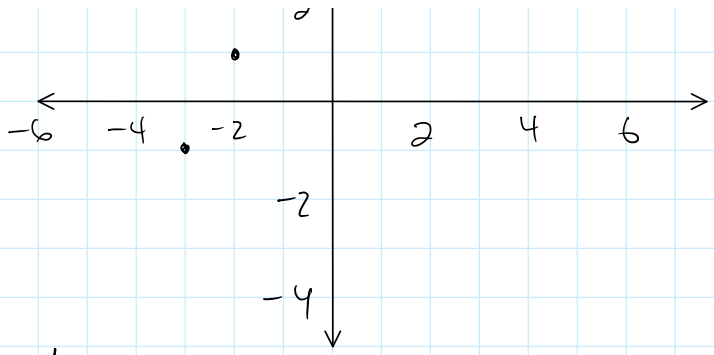
0	5
1	7

$(0, 5)$

$(1, 7)$

$f(-3) = 2(-3) + 5$

$= -1$



Handout