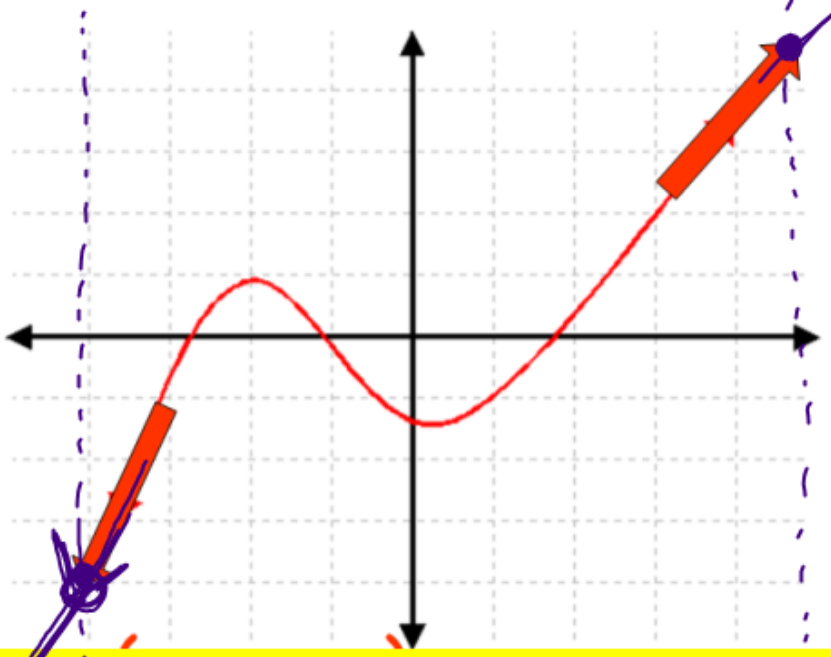
State the Domain and Range from a Continuous Graph

Ex 4



Domain:

$(-\infty, \infty)$

Range:

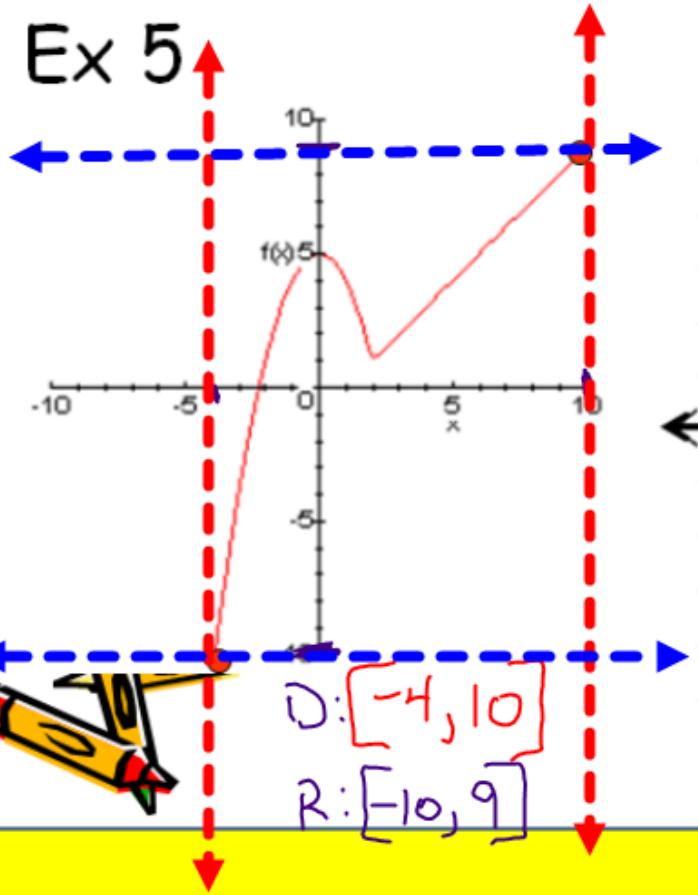
$(-\infty, \infty)$

$[-4, 5]$

$(-4, 5]$

Try These on Your Own:

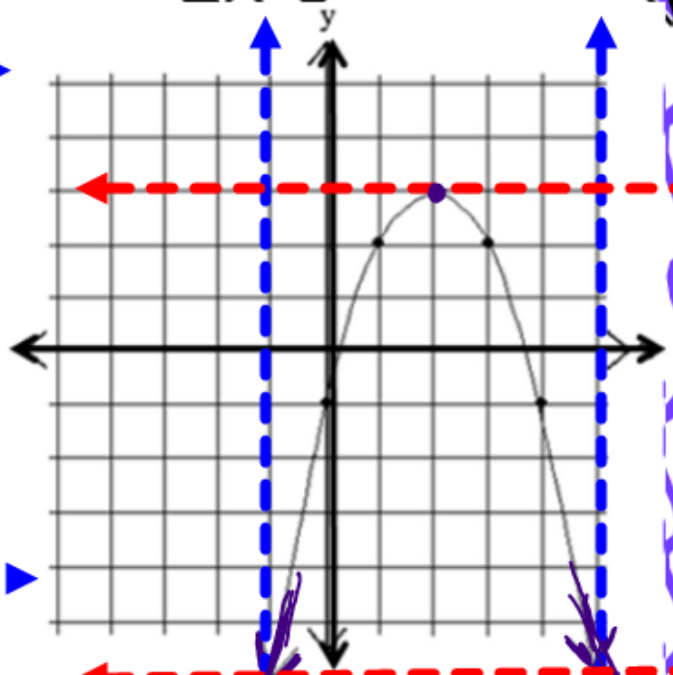
Ex 5



D: $[-4, 10]$

R: $[-10, 9]$

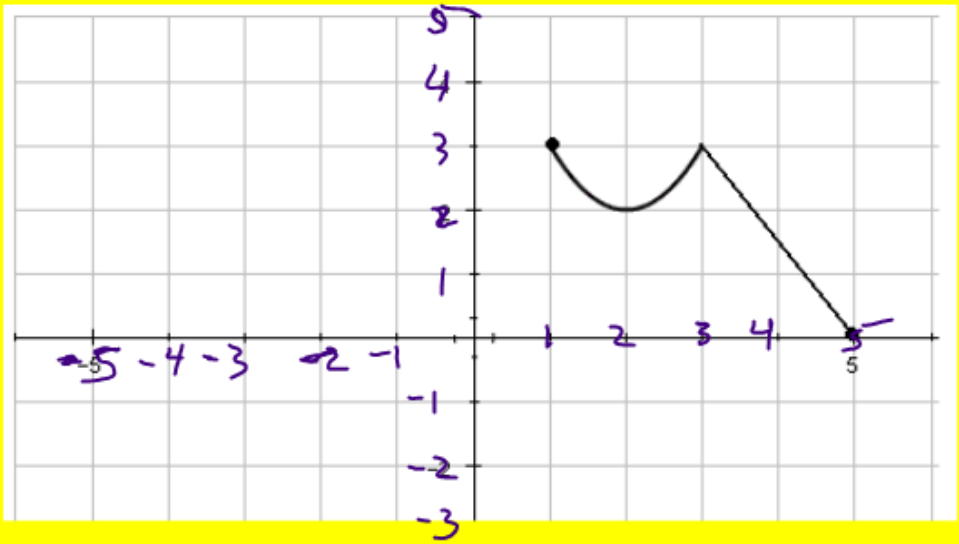
Ex 6



D: $(-\infty, \infty)$

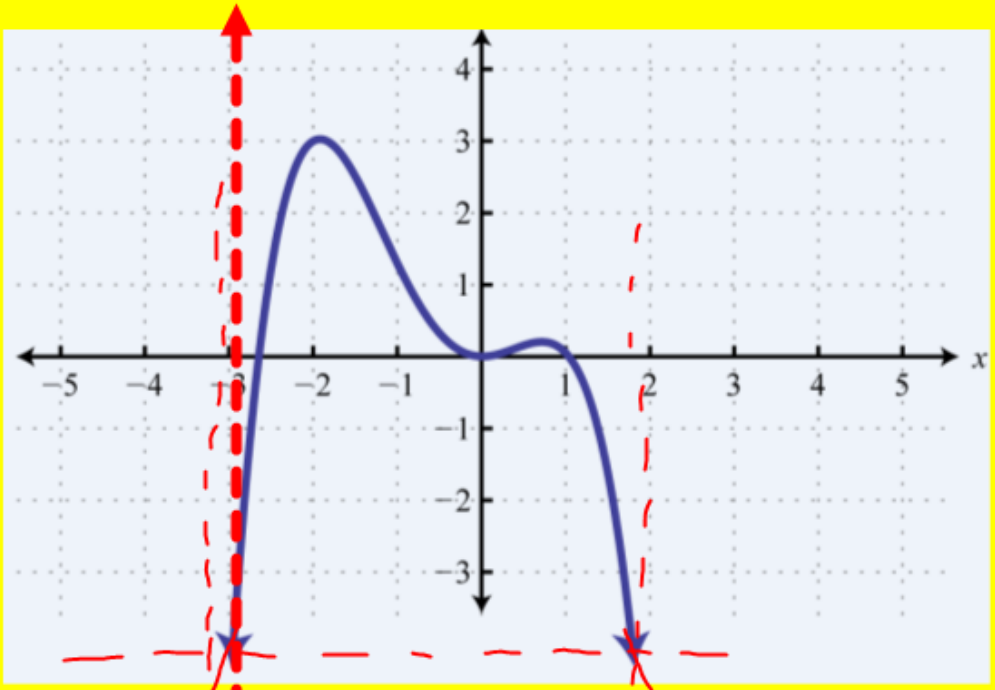
R: $(-\infty, 3]$

Identify the domain and range of each function below



D: [1, 5]

R: [0, 3]



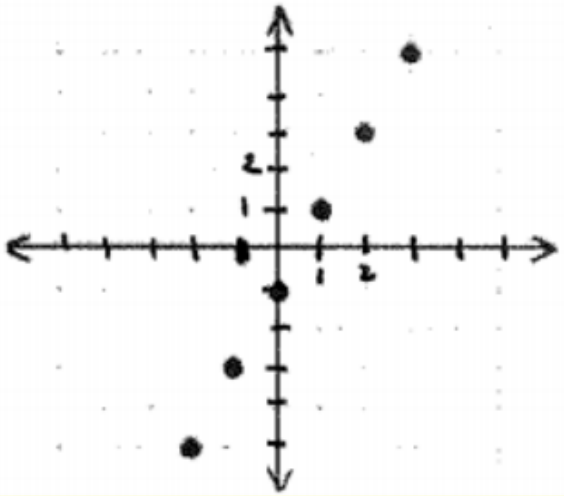
D: $(-\infty, \infty)$

R: $(-\infty, 3]$

- State the domain and range for each function. Use interval notation when appropriate.

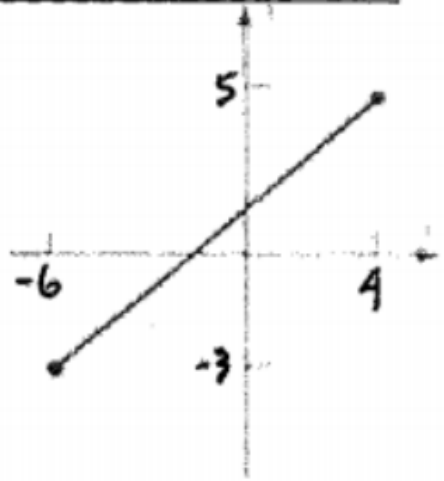
1. D: $\{-2, -1, 0, 1, 2, 3\}$

R: $\{-5, -3, -1, 1, 3, 5\}$



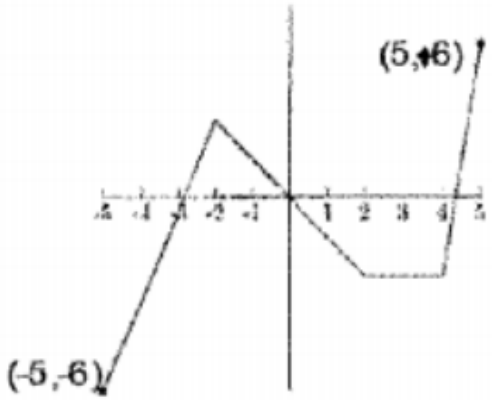
2. D: $[-6, 4]$ $-6 \leq x \leq 4$

R: $[-3, 5]$ $-3 \leq y \leq 5$



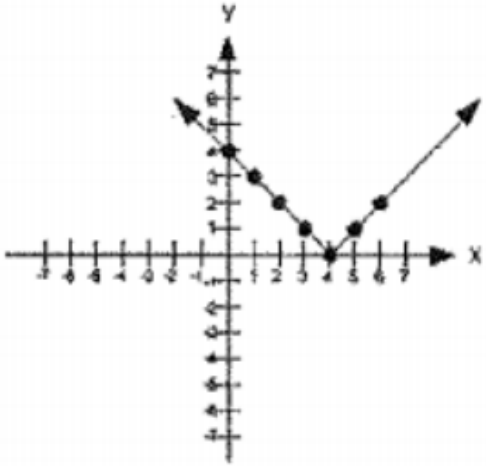
3. D: $[-5, 5]$ $-5 \leq x \leq 5$

R: $[-6, 6]$ $-6 \leq y \leq 6$



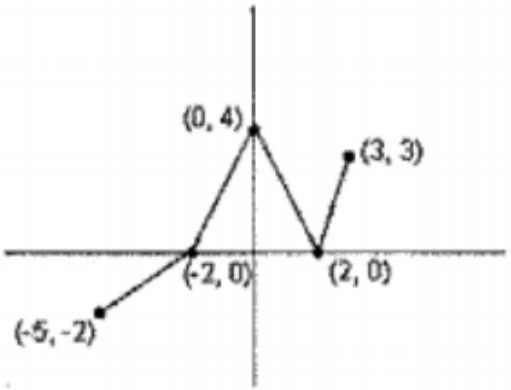
4. D: $(-\infty, \infty)$ $-\infty < x < \infty$

R: $[0, \infty)$ $0 \leq y < \infty$



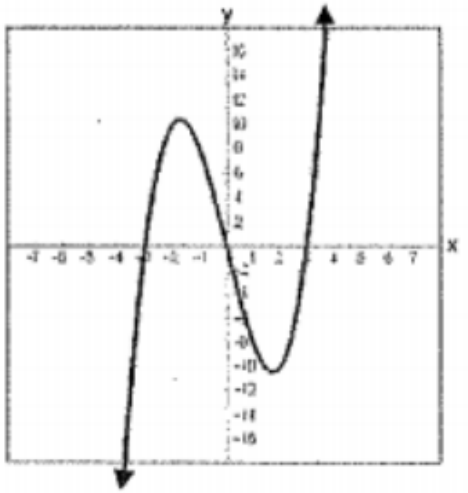
5. D: $[-5,3]$ $-5 \leq x \leq 3$

R: $[-2,4]$ $-2 \leq y \leq 4$



6. D: $(-\infty, \infty)$ $-\infty < x < \infty$

R: $(-\infty, \infty)$ $-\infty < y < \infty$



$y = f(x)$

$f(x) = 3x + 2$

What is function Notation?

f of x

$y = f(x)$

Ex:

$f(4)$ plug in 4 for x & find y.

$f(x) = 10$ $y = 10$ solve for x

VOCABULARY RECALL

Function --- each element of the ***domain*** is paired with ***exactly one*** element of the ***range***.

"**Machine**" uses "input" to give "output"

Function Notation

$$y = f(x)$$

Output

Name of Function

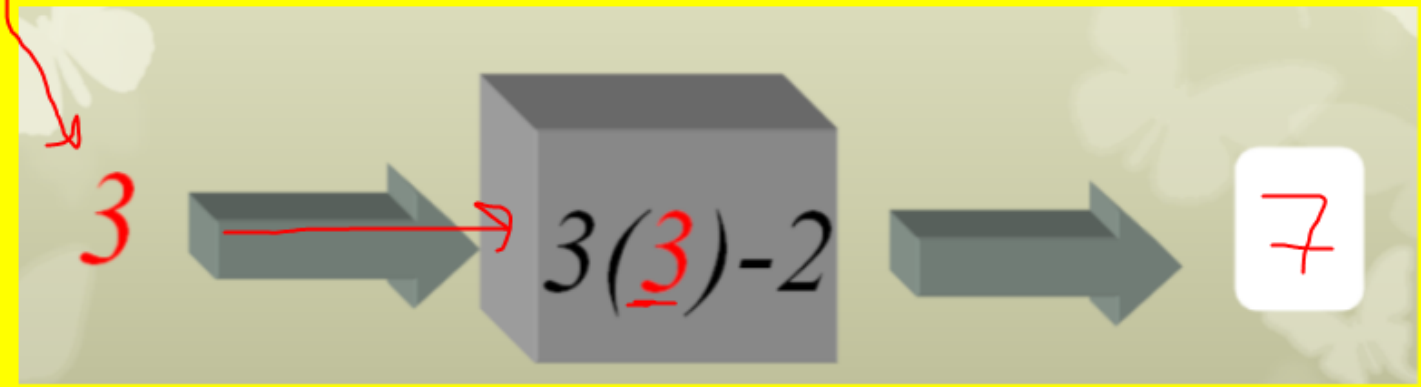
Input

Given f(x) = 3x - 2, find:

$f(3) = 7$

(3, 7)

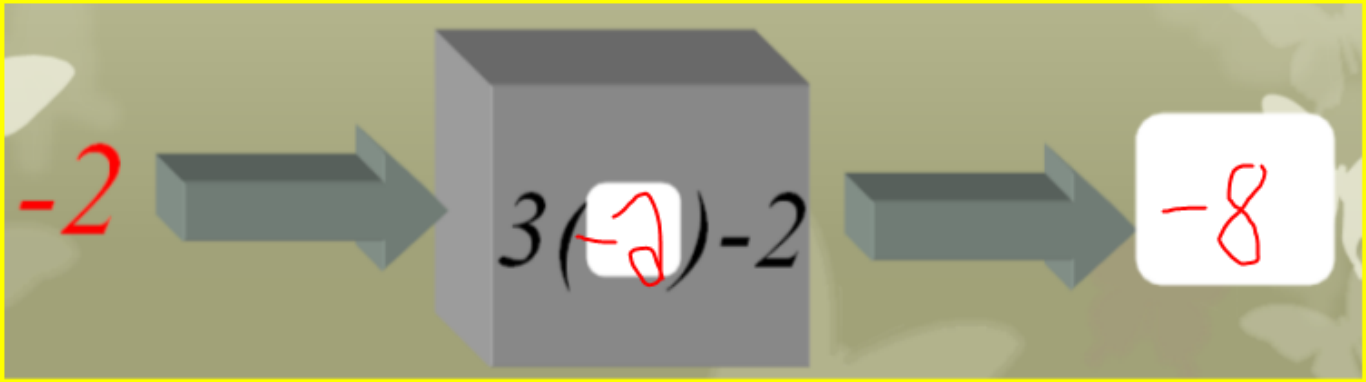
$y = 7$



Given f(x) = 3x - 2, find:

$f(-2) = -8$

$(-2, -8)$

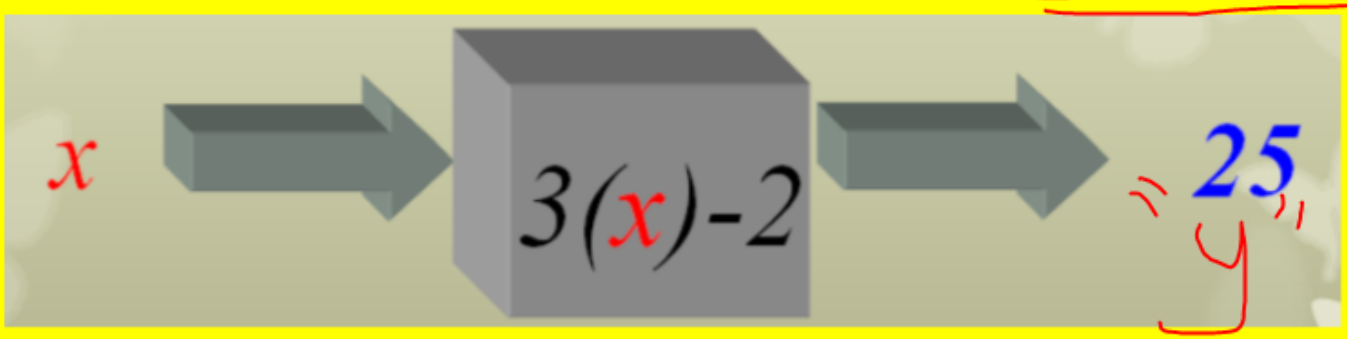


What if you know output, not input?

Given f(x) = 3x - 2, find:

f(x) = 25

f(9) = 25



(9, 25)

3x - 2 = 25

x = 9

Given g(x) = 8 – 5x, find

[redacted]

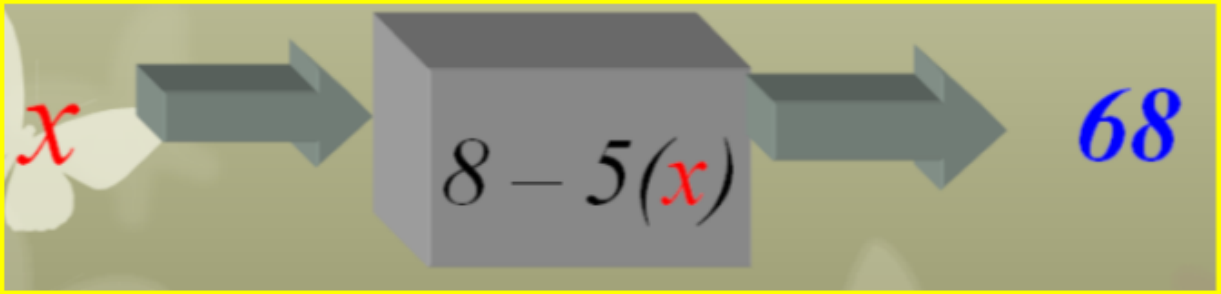
g(6) = -22

(6, -22)

[redacted]

g(x) = 68

8 - 5x = 68



x = -12

(-12, 68)

Try these on your own.

$f(x) = -4x + 7$ $g(x) = \frac{1}{2}x - 9$

g(30) = $\frac{1}{2}(30) - 9$

$15 - 9$

$g(30) = 6$

f(-5) = $-4(-5) + 7$

$20 + 7$

$f(-5) = 27$

f(x) = -25

$-4x + 7 = -25$

$-4x = -32$

$x = 8$

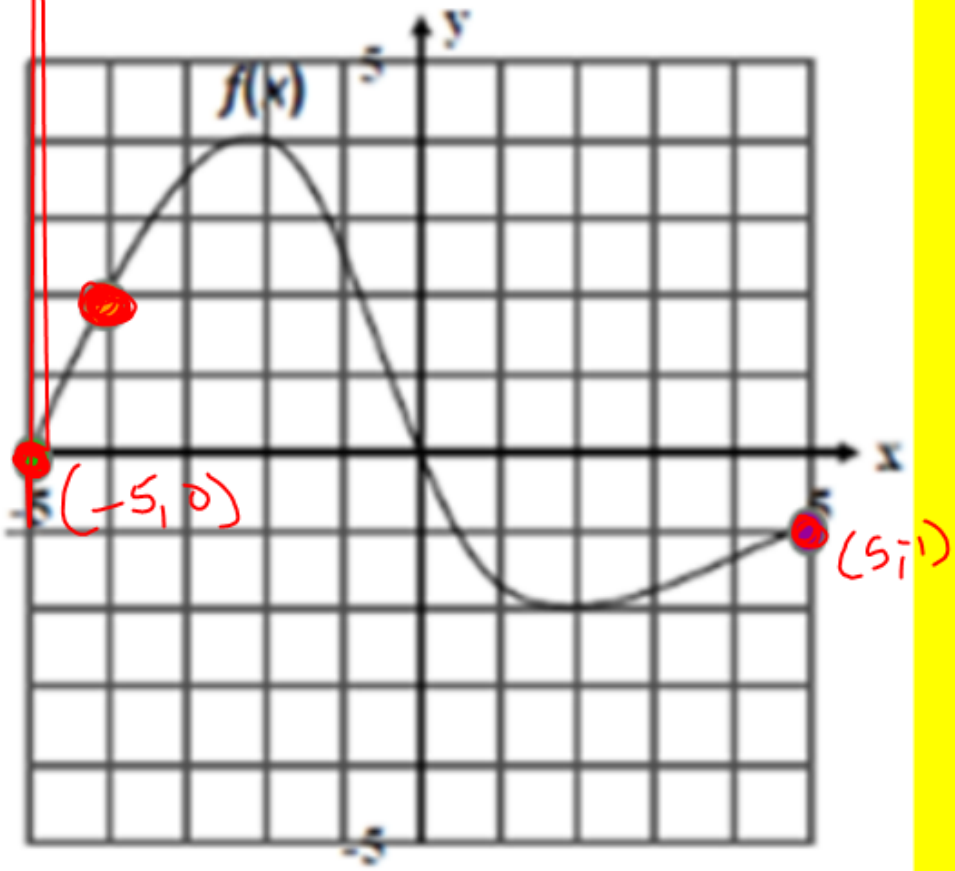
g(x) = 3

$3 = \frac{1}{2}x - 9$

$\frac{12}{\frac{1}{2}} = \frac{\frac{1}{2}x}{\frac{1}{2}}$

$x = 24$

Evaluate Functions from Graphs



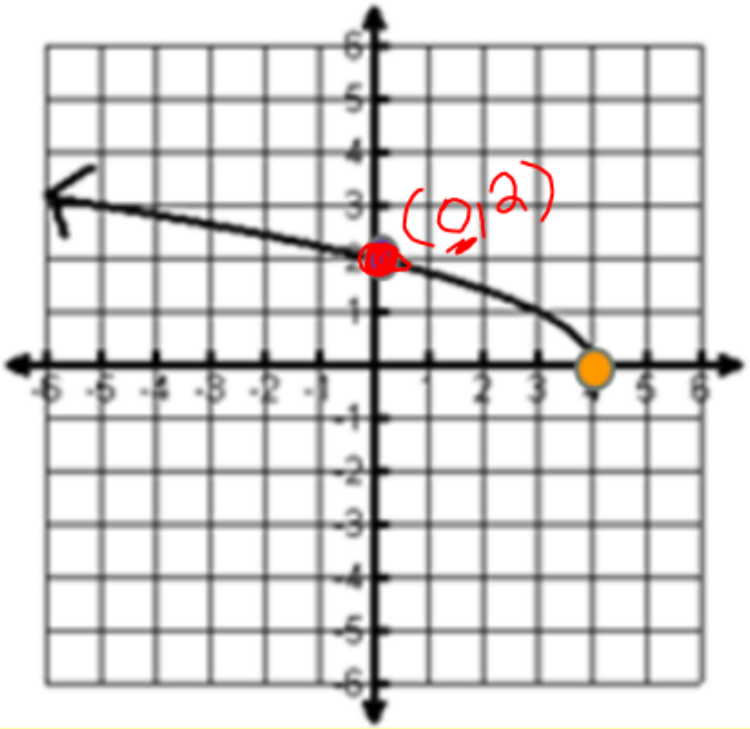
f(-5) = 0

(-5, ?)

f(5) = -1

(5, ?)

f(-4) = 2



$f(x) = 2$

$(?, 2)$

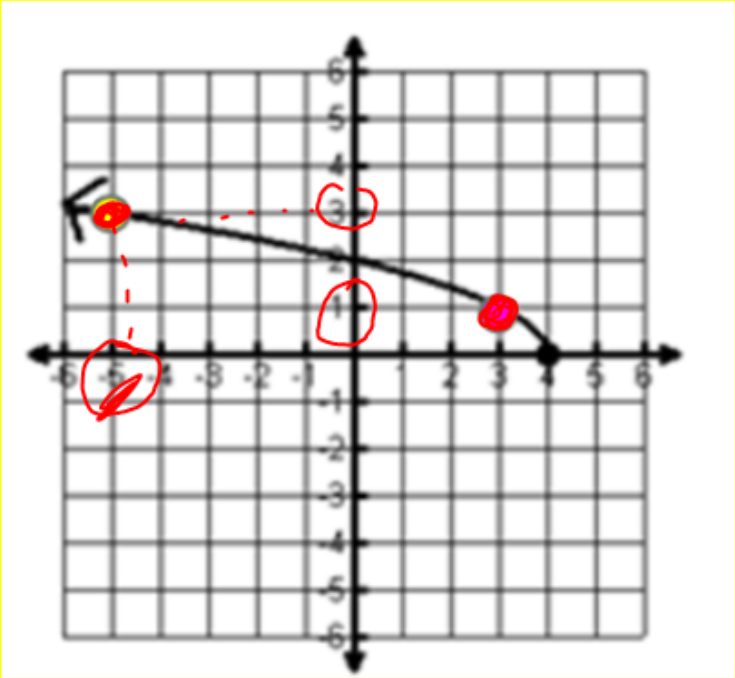
$x = 0$

$f(x) = 0$

$(?, 0)$

$x = 4$

❖ Try these on your own.



$f(x) = 3$

$(?, 3)$

$x = -5$

$f(3) = 1$

$(3, ?)$

Homework #9

Evaluate Functions