

Example 2: Determine whether each equation represents y as a function of x. (one-to-one?) *first solve for y

a. $x = y^2 + 1$

$$\sqrt{x-1} = \sqrt{y^2}$$

$$\pm\sqrt{x-1} = y$$

no

b. $x = -y + 5$

$$x-5 = -y$$

$$-x+5 = y$$

yes

c. $y = |x - 2|$

yes

d. $y = \sqrt{x+5}$

yes

Example 3: Evaluate each function.

a. $g(y) = 7 - 3y$

(a) $g(0)$

$$= 7 - 3(0)$$

$$\boxed{g(0) = 7}$$

(b) $g\left(\frac{7}{3}\right)$

$$= 7 - 3\left(\frac{7}{3}\right)$$

$$\boxed{g\left(\frac{7}{3}\right) = 0}$$

(c) $g(s+5)$

$$= 7 - 3(s+5)$$

$$= 7 - 3s - 15$$

$$\boxed{g(s+5) = -8 - 3s}$$

b. $f(x) = |x| + 4$

(a) $f(5)$

$$= |5| + 4$$

$$\boxed{f(5) = 9}$$

(b) $f(-5)$

$$= |-5| + 4$$

$$\boxed{f(-5) = 9}$$

(c) $f(t)$

$$f(t) = |t| + 4$$

$$c. f(x) = \begin{cases} 2x + 5, & x \leq 0 \\ 2 - x, & x > 0 \end{cases}$$

(a) $f(-2)$

$2(-2) + 5$

1

(b) $f(0)$

$2(0) + 5$

5

(c) $f(2)$

$2 - 2$

0

Example 4: Find the domain of the function.

a. $g(x) = 1 - 2x^2$

all real #s

or

$(-\infty, \infty)$

* look for restrictions

1) $\sqrt{-}$ cannot be (-)

2) variables in the denominator
(no zeros)

b. $s(y) = \frac{3y}{y+5}$ ← what makes this 0?

all real #s
except -5

$y+5=0$
 $y=-5$

or
 $(-\infty, -5) \cup (-5, \infty)$