

# 1-1 Practice

## Functions

Write each set of numbers in set-builder and interval notation, if possible.

1.  $\{-3, -2, -1, 0, 1, \dots\}$

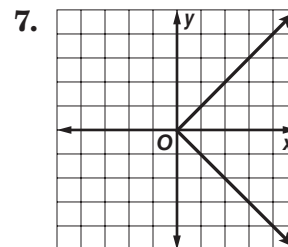
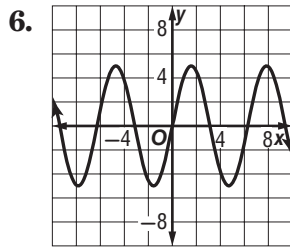
2.  $-6.5 < x \leq 3$

3. all multiples of 2

4.  $x < 0$  or  $x > 8$

Determine whether each relation represents  $y$  as a function of  $x$ .

5. The input value  $x$  is a car's license plate number, and the output value  $y$  is the car's make and model.



8.  $-x + y = 3x$

9.  $x = 5(y - 1)^2$

Find each function value.

10.  $h(x) = x^2 - 8x + 1$

a.  $h(-1)$

b.  $h(2x)$

c.  $h(x + 8)$

11.  $f(a) = -3\sqrt{a^2 + 9}$

a.  $f(4)$

b.  $f(3a)$

c.  $f(a + 1)$

State the domain of each function.

12.  $g(x) = \sqrt{-3x - 2}$

13.  $h(t) = \frac{2t - 6}{t^2 + 6t + 9}$

14. Find  $f(-4)$  and  $f(11)$  for the piecewise function  $f(x) = \begin{cases} 3x^2 + 16 & \text{if } x < -2 \\ \sqrt{x - 2} & \text{if } -2 < x \leq 11 \\ -75 & \text{if } x > 11 \end{cases}$