

domain & range

2. D: $\{-2, 1, 3, 4, 5\}$

R: $\{1, 2, 3, 4, 5\}$

not a function

3. D: $[-3, 11]$

R: $[-5, 9]$

yes

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

R: $\{-10, -8, -6, -4, -2, 0\}$

no

5. D: $[-1, 1]$

R: $[-2, 2]$

no

6. D: $\{1, 2, 3, 4\}$

R: $\{-16, -9, -4, -1, 2\}$

no

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

R: $\{0, 1, 4\}$

yes

8. D: $\{-2, 1, 3, 5\}$

R: $\{-3, 1, 2, 4\}$

yes

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

R: $[2, \infty)$

yes

10. D: $[-2, 3)$

R: $[1, 4)$

yes

11. D: $(-\infty, -1, 0)$

R: $(3, \infty)$

yes

12. D: $\{1\}$

R: $\{2, -3, 0, 2\}$

no

X	Y
-2	-11
3	4
7	16
3.63	5.9

Function Notation

14. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1$$

$$f(x) = x^2 + 7$$

$$h(x) = \frac{12}{x}$$

$$j(x) = 2x + 9$$

a. $g(10) = -30 + 1$

$$\boxed{-29}$$

b. $f(3) =$

$$3^2 + 7 = 9 + 7 \\ \boxed{16}$$

c. $h(-2) = \frac{12}{-2}$

$$\boxed{-6}$$

d. $j(7) = 2(7) + 9$

$$\boxed{23}$$

e. $h(a) = \frac{12}{a}$

f. $g(b+c) = -3(b+c) + 1$

$$\begin{array}{r} 7^2 + 7 \\ 49 + 7 \\ \hline 56 \end{array} \quad \begin{array}{r} f(7) + g(4) \\ \downarrow \\ -12 + 1 \\ -11 \\ \hline 45 \end{array}$$

h. $2 \cdot h(-3) + g(2)$

$$\begin{array}{r} 2 \cdot -4 + -3(2) + 1 \\ -8 + -6 \\ \hline -13 \end{array}$$

i. $\frac{f(-1) + g(2)}{j(10)} \rightarrow 29$

$$\boxed{\frac{3}{29}}$$

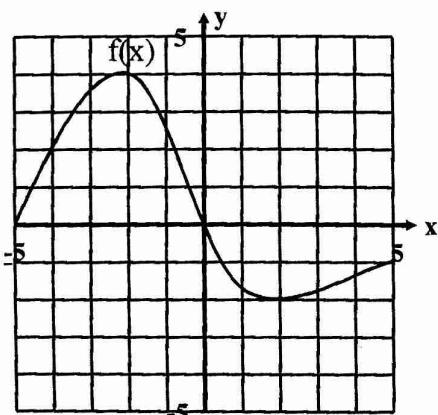
j. Find x if $g(x) = 16$

$$\begin{aligned} 16 &= -3x + 1 \\ 15 &= -3x \\ -5 &= x \end{aligned}$$

k. Find x if $h(x) = -2$

$$\begin{aligned} \frac{12}{x} &= -2 \\ 12 &= -2x \\ -6 &= x \end{aligned}$$

15. Given this graph of the function $f(x)$:



Find:

a. $f(-4) = 2$

b. $f(0) = 0$

c. $f(3) = -0.8$

d. $f(-5) = 0$

e. x when $f(x) = 2$

$0.9 \notin -4$

f. x when $f(x) = 0$

0

g. $f(5) + 4 =$

$$\begin{array}{r} -1 + 4 \\ \hline 3 \end{array}$$

h. $f(2) - f(-4) =$

$$-2 - 2 = \boxed{-4}$$