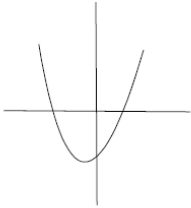


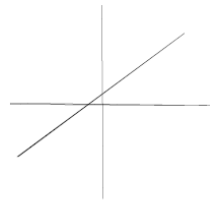
View [Vertical line test for function](#) and then do these:

1) Which of the following is a function?

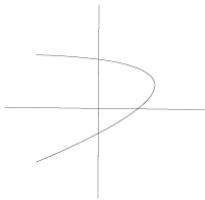
a)



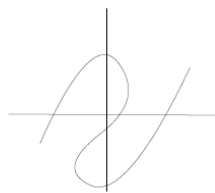
b)



c)



d)



The key to deciding if an equation represents a function is to solve it for y and if that entails taking a \pm square root, then it is *not* a function. Hence, it would fail the vertical line test (VLT).

e) $y = 3x - 7$

f) $y^2 - x^2 = 1$

g) $\sqrt{y} + x = 2$

h) $x^2 + y^2 = 1$

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Now view [Evaluation functions](#) and evaluate each function (odd exercises) below.

- | | |
|--|---|
| 11) $g(x) = 4x - 4$; Find $g(0)$ | 12) $g(n) = -3 \cdot 5^{-n}$; Find $g(2)$ |
| 13) $f(x) = 3x + 1 + 1$; Find $f(0)$ | 14) $f(x) = x^2 + 4$; Find $f(-9)$ |
| 15) $f(n) = -2 -n - 2 + 1$; Find $f(-6)$ | 16) $f(n) = n - 3$; Find $f(10)$ |
| 17) $f(t) = 3^t - 2$; Find $f(-2)$ | 18) $f(a) = 3^{a-1} - 3$; Find $f(2)$ |
| 19) $f(t) = t + 3 $; Find $f(10)$ | 20) $w(x) = x^2 + 4x$; Find $w(-5)$ |
| 21) $w(n) = 4n + 3$; Find $w(2)$ | 22) $w(x) = -4x + 3$; Find $w(6)$ |
| 23) $w(n) = 2^{n+2}$; Find $w(-2)$ | 24) $p(x) = - x + 1$; Find $p(5)$ |
| 25) $p(n) = -3 n $; Find $p(7)$ | 26) $k(a) = a + 3$; Find $k(-1)$ |
| 27) $p(t) = -t^3 + t$; Find $p(4)$ | 28) $k(x) = -2 \cdot 4^{2x-2}$; Find $k(2)$ |
| 29) $k(n) = n - 1 $; Find $k(3)$ | 30) $p(t) = -2 \cdot 4^{2t+1} + 1$; Find $p(-2)$ |
| 31) $h(x) = x^3 + 2$; Find $h(-4x)$ | 32) $h(n) = 4n + 2$; Find $h(n+2)$ |
| 33) $h(x) = 3x + 2$; Find $h(-1+x)$ | 34) $h(a) = -3 \cdot 2^{a+3}$; Find $h(\frac{a}{4})$ |
| 35) $h(t) = 2 -3t - 1 + 2$; Find $h(n^2)$ | 36) $h(x) = x^2 + 1$; Find $h(\frac{x}{4})$ |
| 37) $g(x) = x + 1$; Find $g(3x)$ | 38) $h(t) = t^2 + t$; Find $h(t^2)$ |
| 39) $g(x) = 5^x$; Find $g(-3-x)$ | 40) $h(n) = 5^{n-1} + 1$; Find $h(\frac{n}{2})$ |

The *domain* of a function is the set of real numbers for which the function is defined. That is, when you substitute a number from the domain into the function, you get a real number back. So any value that would make a denominator equal zero or make a radicand negative is *not* in the domain of that function.

View [Finding the domain of a function](#) and [Finding domain from a graph](#). Then specify the domain of each.

- | | |
|-------------------------------------|---|
| 2) $f(x) = -5x + 1$ | 3) $f(x) = \sqrt{5 - 4x}$ |
| 4) $s(t) = \frac{1}{t^2}$ | 5) $f(x) = x^2 - 3x - 4$ |
| 6) $s(t) = \frac{1}{t^2 + 1}$ | 7) $f(x) = \sqrt{x - 16}$ |
| 8) $f(x) = \frac{-2}{x^2 - 3x - 4}$ | 9) $h(x) = \frac{\sqrt{3x - 12}}{x^2 - 25}$ |
| 10) $y(x) = \frac{x}{x^2 - 25}$ | |