Functional Notation

When writing an expression for a function, there are several different notations. For example, $f: x \to$. These are all called **functional notation**.

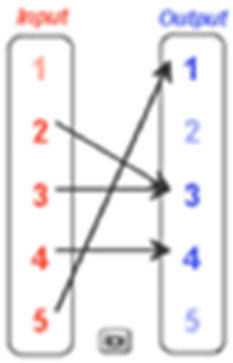
$f(x)$, said as "f of x", represents a function f with independent variable x.

Example: Evaluate when x = 5.

x-y Notation

$y = 4x - 7$

Function Notation

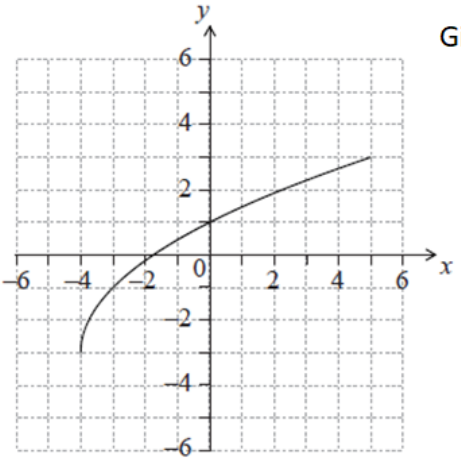


Find each value:

f(2) =

f(3) =

If f(x) = 1, then x = ___



Given the graph of g(x).

g(2) =

g(-1) =

If g(x) = -1, then x =

Calculate the substitutions indicated for each given function.

a $g(x) = \{(2, 3), (4, 5), (6, 7), (8, 9), (10, 11)\}$, $g(8)$

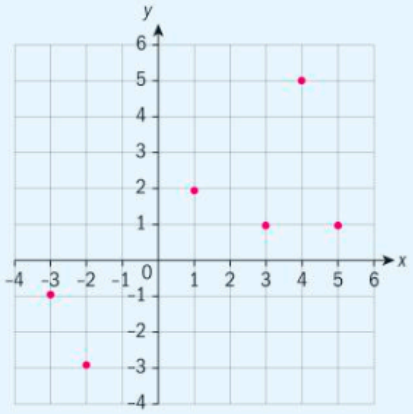
b $f(x) = -2x - 1$, $f(-3)$

c $f: x \to 3x + 7$, $f(1)$

d $h(x) = 3$, $h(-1)$

e $f(4)$ for the graph.

for **e.** only



If $f(x) = -3x^2 - 1$, find:

a $f(-1)$ **b** $f(0)$ **c** $f(100)$ **d** $f(a)$ **e** $f(x+1)$

The formula to calculate the volume of gas left in a car's tank in litres, after travelling d kilometres, is $V(d) = -0.115d + 60$.

a Explain what $V(250)$ means in the context of the question and calculate its value.

b Explain what $V(d) = 10$ means in the context of the question and calculate its value.

c What values of d do not make sense for this situation?

Nikita is planning a sport banquet. He must pay \$320 to rent the room and \$20 per person for the dinner.

a Express the total cost, C, as a function of the number of people, n, who attend the banquet.

b What notation could be used to find the cost of the banquet if 125 people attend? Calculate this value.

c What notation could be used to find the number of people who can attend the banquet if Nikita's budget for the banquet is \$1250? Calculate this value.

d What values of n do not make sense for this situation?

Using your GDC, sketch the following graphs:

a $f(x) = -x^2 + 4$ **b** $y = \sqrt{x-3}$

Using the information below, draw the graph for each line:

a x-intercept at $(-3, 0)$ and y-intercept at $(0, 5)$

b y-intercept at $(0, -1)$ and slope of $\frac{1}{2}$

c $y = -x + 1$

d $C(n) = 40 + 5n$