

FUNCTION NOTATION

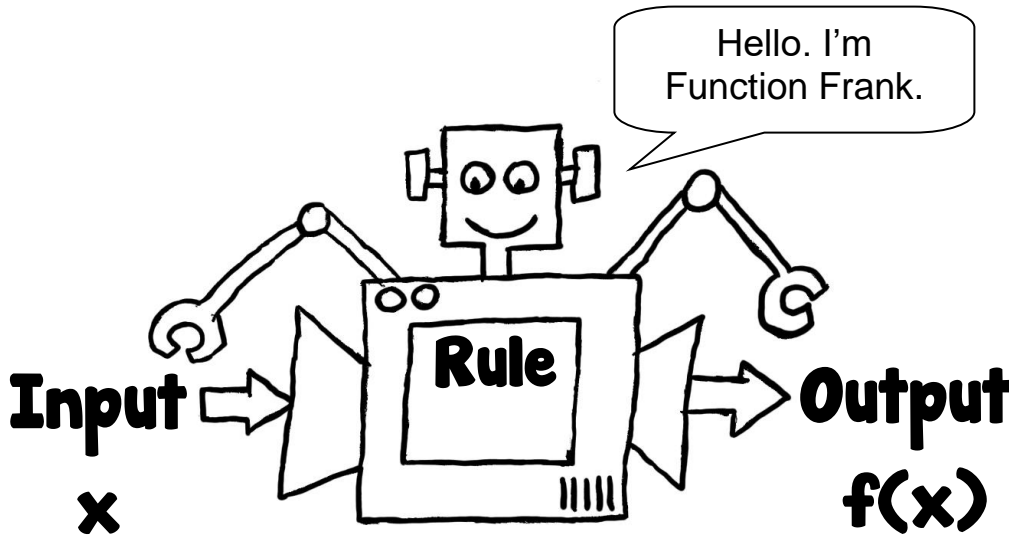
A man bought x boxes of doughnuts for \$3.49 each. He paid with a \$50 bill and received the correct amount of change. If he received more than \$10 but less than \$20, which inequality represents the number of boxes of doughnuts he could have bought?

- A. $8 \leq x \leq 11$ C. $9 \leq x \leq 11$
 B. $8 \leq x \leq 12$ D. $9 \leq x \leq 12$

A **FUNCTION** can be a _____ with _____ values (the **DOMAIN**) and _____ values (the **RANGE**).

FUNCTION NOTATION is the way a function is written. The most popular function notation is $f(x)$, which is read “f of x.” For example, to find $f(1)$, find the output when the input is 1.

EXAMPLE 1: Use the table to determine Function Frank’s rule.



Input x	Output $f(x)$
1	5
3	7
6	10
7	11
8	12
10	14

Function Frank’s Rule: Output = _____ or $f(x) =$ _____.

Find each of the following: $f(6) =$ _____ $f(3) =$ _____

$f(8) =$ _____ If $f(x) = 11$, $x =$ _____

EXAMPLE 2: For $h = \{(-2, 6), (2, 8), (4, 10), (6, 12), (8, 14)\}$, find each of the following.

1) $h(6) =$ _____

2) $h(8) =$ _____

EXAMPLE 3: The following table shows values for function $h(x)$.

x	0	1	2	3	4
$h(x)$	-10	-7	4	29	74

1) $h(4) - 3 =$ _____

3) If $x = 2$, then $h(x + 2) =$ _____

2) $10 - h(2) =$ _____

4) If $x = 0$, then $3h(x) =$ _____

EXAMPLE 4: Find the range of each function for the given domain.

1) $f(x) = x^2 - 3$; $D = \{-2, 0, 2\}$; $R =$ _____

Ordered Pairs: _____

x	$f(x)$

2) $g(x) = -2x - 4$; $D = \{-4, -1, 2\}$; $R =$ _____

Ordered Pairs: _____

x	$g(x)$

EXAMPLE 5: If $f(x) = 2 - 1.3x$ and $g(x) = .25x^2 - 9.1$, find the following.

1) $f(-2) =$ _____

3) $g(8) - f(3) =$ _____

2) $g(5) =$ _____

4) $f(4) + g(-1) =$ _____