

Understanding *Functions*

8.F.A.1

8.F.A.2

Name _____ Date _____

A function assigns exactly one output to each input. Decide whether each relation is a function, evaluate functions at given inputs, and read input/output tables.

- Does the set of ordered pairs $\{(1, 3), (2, 5), (3, 7), (4, 9)\}$ represent a function? Explain.
- Does the set $\{(2, 4), (3, 6), (2, 8), (5, 10)\}$ represent a function? Explain.
- Which mapping represents a function?
A) $1 \rightarrow a, 1 \rightarrow b, 2 \rightarrow c$
C) $2 \rightarrow a, 2 \rightarrow b, 3 \rightarrow c$
B) $1 \rightarrow a, 2 \rightarrow a, 3 \rightarrow b$
D) $4 \rightarrow a, 4 \rightarrow b$
- The function is given by $f(x) = 3x + 2$. Find $f(4)$.
- Using $f(x) = 3x + 2$, find $f(0)$ and $f(-1)$.
- Complete the input/output table for the function $y = 2x - 3$.

x	y
0	?
1	?
3	?
5	?

- An input/output table is shown. Does it represent a function?

Input	Output
1	5
2	5
3	5
4	5

- For the function $g(x) = x^2 + 1$, find $g(3)$ and $g(-2)$.
- The table shows a function. Find the output when the input is 6.

x	y
1	4
2	7
3	10
4	13

10. A taxi function charges $f(m) = 2m + 3$ dollars for a ride of m miles. How much does a 7-mile ride cost?
11. For $f(x) = 5x - 4$, the output is $f(x) = 21$. What input x produced it?
12. A machine follows a function: it takes a number, triples it, then subtracts 1. Write the function $f(x)$, then find the output when the input is 8.
13. Maria's phone plan is a function $c(g) = 10 + 4g$, where c is the monthly cost in dollars and g is gigabytes used. Find the cost for 6 gigabytes, and find how many gigabytes give a \$50 bill.
14. A relation pairs students with the sports they play: (Ana, soccer), (Ben, tennis), (Ana, track). Explain why this relation is not a function, using the words input and output.