

Algebra 1 - Functions and Function Notation - Worksheet

Common Core F-IF.A.1, F-IF.A.2, F-IF.B.5 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This worksheet has 20 problems on functions and function notation, aligned to Common Core F-IF.A.1, F-IF.A.2, and F-IF.B.5. You will test relations with the vertical line test, evaluate $f(x)$, find domain and range, and use functions to model prices and heights. Early problems check one skill at a time; the final six put the skill inside real situations. Write each step on paper before you look at the answer key.

Algebra 1 · Common Core State Standards: **F-IF.A.1, F-IF.A.2, F-IF.B.5**

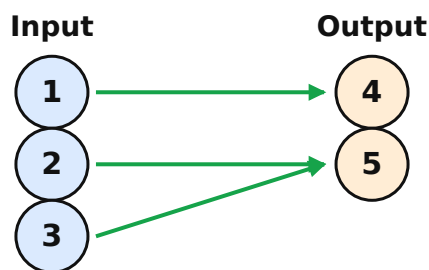
Exercise 1 - Function or not

Determine whether the relation $\{(1,2),(2,4),(3,6),(4,8)\}$ is a function.

Exercise 2 - Repeated input

Determine whether the relation $\{(1,5),(2,7),(1,9)\}$ is a function.

Exercise 3 - Mapping diagram



Mapping diagram.

Determine whether the mapping represents a function. Then give the domain and range.

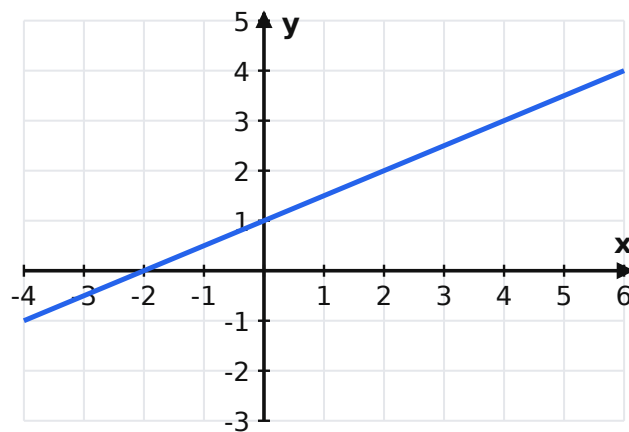
Exercise 4 - Table check

x	y
4	3
5	8
4	6

A table of values.

Determine whether the table shows y as a function of x .

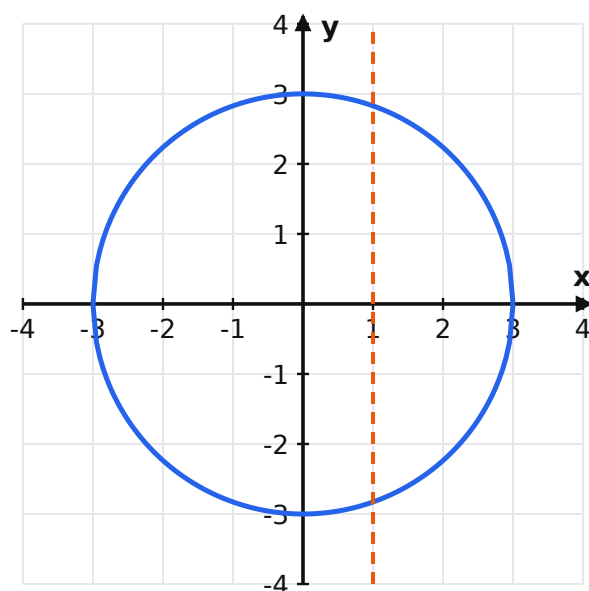
Exercise 5 - Vertical line test



A line.

Use the vertical line test to decide whether the graph is a function.

Exercise 6 - Circle graph



A circle.

Use the vertical line test to decide whether the graph of a circle is a function.

Exercise 7 - Evaluate a function

For $f(x) = 3x - 4$, find $f(5)$.

Exercise 8 - Quadratic function value

For $f(x) = x^2 + 2x - 3$, find $f(-3)$.

Exercise 9 - Negative input

For $g(x) = -2x + 7$, find $g(-4)$.

Exercise 10 - Evaluate h

For $h(t) = 5t^2 - 3$, find $h(2)$.

Exercise 11 - Find the input

For $f(x) = 2x + 1$, find x when $f(x) = 15$.

Exercise 12 - Two functions

Let $f(x) = 2x - 1$ and $g(x) = x^2$. Find $f(3) + g(-2)$.

Exercise 13 - Read a table

x	$f(x)$
0	6
1	9
2	12
3	15

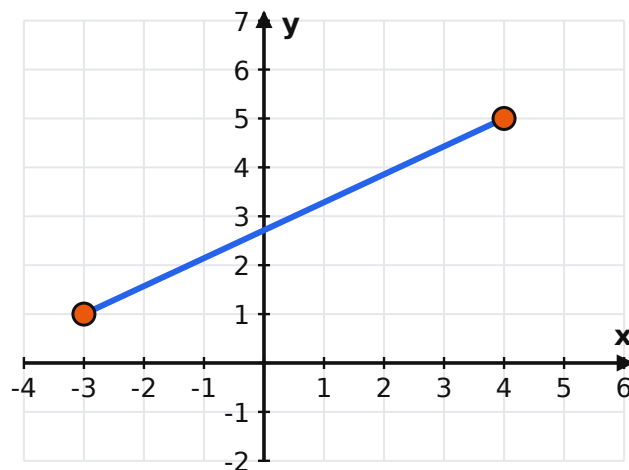
Values of the function f .

The table lists values of a function f . Find $f(3)$ and write the value of x for which $f(x)=9$.

Exercise 14 - Domain and range

Give the domain and range of $\{(,4),(0,1),(3,4),(5,-2)2\}$.

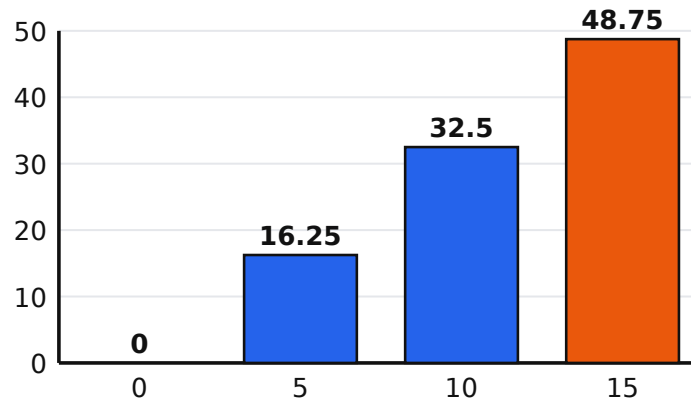
Exercise 15 - Domain and range from a graph



A line segment.

The graph is a segment from $(-3,1)$ to $(4,5)$. Give the domain and range.

Exercise 16 - Gas cost



Cost in dollars for 0, 5, 10, and 15 gallons.

The cost of gasoline is $C(g) = 3.25g$ dollars for g gallons. Find $C(12)$. The tank holds 15 gallons, so give the domain and range for this situation.

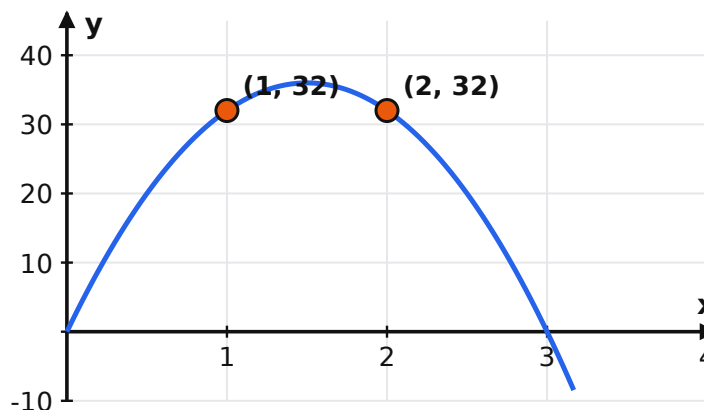
Exercise 17 - Concert fee

A ticket site charges $T(n) = 8n + 5$ dollars for n tickets, including a \$5 booking fee. Find $T(6)$, then find the number of tickets when $T(n) = 93$.

Exercise 18 - Rule in words

A function multiplies the input by 3 and then subtracts 2. Write the rule using function notation, find the output for the input -4 , and find the input that gives the output 25.

Exercise 19 - Ball height



Height in feet after t seconds.

A ball's height in feet after t seconds is $h(t) = -16t^2 + 48t$. Find $h(1)$, $h(2)$, and $h(3)$. Is the time a function of the height? Explain.

Exercise 20 - Taxi fare

A taxi fare is $F(m) = 2.50 + 1.75m$ dollars for m miles. Find $F(8)$. Maya has \$20. Find the greatest whole number of miles she can ride.

Exercise 21 - Explain functions

(a) Input: a student's name; output: the student's birth date. (b) Input: a birth date; output: the students in a school born on that date. Decide whether each situation is a function.