LESSON MAKER PRO

Inputs in Action

Read functions, find outputs, and identify domains.

HIGH SCHOOL · A1P.AF.E.15

A1P.AF.E.15 "Define a function as a mapping from one set (called the domain) to another set (called the range) that assigns to each element of the domain exactly one element of the range. a. Use function notation..."

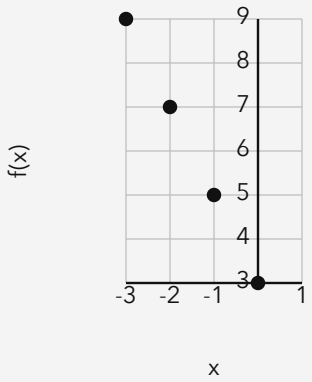
NAME _____ DATE _____

INPUT TO OUTPUT

A function gives each allowed input exactly one output. In f(x), x is the input. On a graph, the domain is the set of x-values where the function is shown; a real situation may also limit which inputs make sense.

WORKED EXAMPLE

The dots show f. Find f(-3) and the domain.



1. At x = -3, the dot has y = 9.
2. List the x-values of all four dots.

Answer: f(-3) = 9; domain: {-3, -2, -1, 0}

PRACTICE 4 problems

1 For $p(x) = 5x + 2$, find p(4).

ANSWER _____

2 For $q(x) = x^2 - 6$, find q(-4).

ANSWER _____

3 For $r(x) = 2^x + 1$, find r(5).

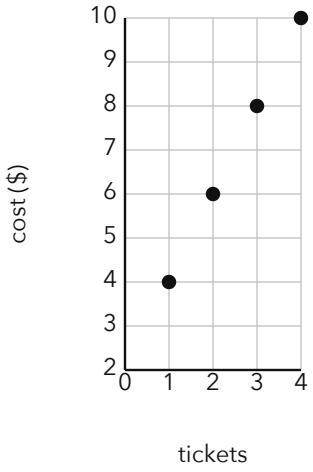
ANSWER _____

4 For $s(x) = |x - 6|$, find s(8).

ANSWER _____

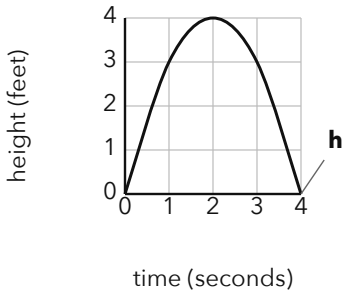
APPLY IT Show your work

1 A concert app charges $2 per ticket plus a $2 order fee. Orders have 1 to 4 tickets. The dots show cost T(x). Find T(2), tell what it means, and give the domain.



ANSWER _____

2 The curve shows a skateboarder's height h(t) in feet during a jump, t seconds after takeoff. Find h(2) and the time domain shown.



ANSWER _____

CHALLENGE One step up

For a(x) = |x - 7| with domain {1, 4, 7, 10}, find every input for which a(x) = 3. Explain why two inputs can share an output in a function.

WORK SPACE AND ANSWER

ANSWER KEY

Inputs in Action

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	For $p(x) = 5x + 2$, find $p(4)$.	**22**
2	For $q(x) = x^2 - 6$, find $q(-4)$.	**10**
3	For $r(x) = 2^x + 1$, find $r(5)$.	**33**
4	For $s(x) = \|x - 6\|$, find $s(8)$.	**2**

PART 2 · APPLY IT

1. **T(2) = 6. Two tickets cost $6. Domain: {1, 2, 3, 4}.** Read the dot at x = 2. The order limit makes the domain the whole-number ticket counts from 1 through 4.
2. **h(2) = 4 feet; domain: 0 <= t <= 4 seconds.** Read the height at t = 2. The curve runs from takeoff at t = 0 to landing at t = 4.

CHALLENGE

x = 4 and x = 10. Both give an output of 3, but each input still has exactly one output.

Accept domains written in words or equivalent set notation. For the jump, accept [0, 4] seconds.