LESSON MAKER PRO

Function Input Lab

Substitute the input, simplify, and interpret the output.

HIGH SCHOOL · MA.912.F.1.2

MA.912.F.1.2 "Given a function represented in function notation, evaluate the function for an input in its domain. For a real-world context, interpret the output."

NAME _____ DATE _____

EVALUATE THE RULE

To evaluate f(a), replace x in the rule with the input a. Then simplify carefully. Make sure the input is in the domain, so no denominator becomes zero.

WORKED EXAMPLE

Given h(x) = 7x - 9, find h(6).

1. Substitute 6 for x: h(6) = 7(6) - 9.
2. Multiply: 7(6) = 42.
3. Subtract: h(6) = 42 - 9 = 33.

Answer: h(6) = 33

PRACTICE 6 problems

1 Given f(x) = 2x + 11, find f(4).

ANSWER _____

2 Given g(x) = x^2 - 5, find g(-3).

ANSWER _____

3 Given p(x) = (x + 12)/4, find p(0).

ANSWER _____

4 Given q(x) = |x - 10|, find q(14).

ANSWER _____

5 Given r(x) = 18/x + 1, find r(-2).

ANSWER _____

6 Given s(x) = (5/2)x - 1, find s(8).

ANSWER _____

APPLY IT Show your work

1 A music app tracks the gigabytes of phone data remaining after streaming music. The function D(d) = 28 - 4d gives the gigabytes remaining after d days. Find D(5), then state what the output means.

WORK SPACE

ANSWER _____

2 A student club sells T-shirts for a fundraiser. The function P(t) = 12t - 45 gives the profit, in dollars, after selling t shirts. Find P(9), then state what the output means.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Given $k(x) = (x^2 - 16)/(x - 4)$, find k(-4). Then explain why -4 is in the domain of k.

WORK SPACE AND ANSWER

Function Input Lab

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Given f(x) = 2x + 11, find f(4).	**19**
2	Given g(x) = x^2 - 5, find g(-3).	**4**
3	Given p(x) = (x + 12)/4, find p(0).	**3**
4	Given q(x) = |x - 10|, find q(14).	**4**
5	Given r(x) = 18/x + 1, find r(-2).	**-8**
6	Given s(x) = (5/2)x - 1, find s(8).	**19**

PART 2 · APPLY IT

1. **D(5) = 8. After 5 days, 8 gigabytes of phone data remain.** Substitute 5 for d: D(5) = 28 - 4(5) = 8. The output represents gigabytes of data remaining.
2. **P(9) = 63. After selling 9 shirts, the club earns a profit of $63.** Substitute 9 for t: P(9) = 12(9) - 45 = 63. The output represents profit in dollars.

CHALLENGE

k(-4) = 0. The input -4 is in the domain because -4 - 4 is not zero, so the denominator is not zero.

Accept equivalent simplified numerical forms. For the real-world problems, accept clear interpretations that include the correct quantity and unit.