LESSON MAKER PRO

Input Output Check

Decide when each input has exactly one output.

GRADE 8 · 8.F.A.1

CCSS.Math.Content.8.F.A.1 "Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. 1"

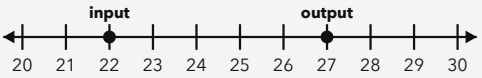
NAME _____ DATE _____

THE FUNCTION RULE

A function assigns each input exactly one output. An output may match more than one input, but one input cannot match two different outputs. A graph shows a function when its ordered pairs follow this rule.

WORKED EXAMPLE

The number line marks an input and its output. Write the ordered pair. Can this one match be part of a function?



1. Read the marked input: 22.
2. Read the marked output: 27.
3. Write input first and output second: (22, 27).
4. One input is matched with one output.

Answer: (22, 27); yes, it can be part of a function.

PRACTICE 6 problems

1 Is the relation {(0, 4), (1, 4), (2, 4)} a function? Explain briefly.

ANSWER _____

2 Is the relation {(3, -1), (3, 2), (4, 0)} a function? Explain briefly.

ANSWER _____

3 A rule says, "Multiply input x by 3, then add 1." What is the output when x = 2?

ANSWER _____

4 Is the relation {(-3, 0), (-2, 2), (-1, 4)} a function?

ANSWER _____

5 A relation includes the ordered pairs (4, 0) and (4, 6). Can the relation be a function? Explain briefly.

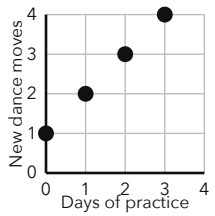
ANSWER _____

6 A rule says, "Multiply input x by -2, then add 4." What is the output when x = -1?

ANSWER _____

APPLY IT Show your work

1 A dance club tracks how many new moves a student learns after each day of practice. The graph shows the relation. Is the relation a function? What output is paired with input 2?



ANSWER _____

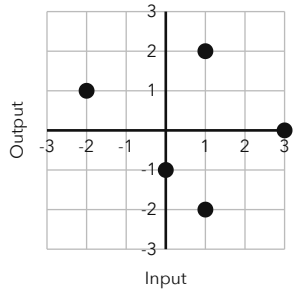
2 A gaming club records each round number and the score shown at the end of that round: {(1, 12), (2, 16), (2, 19), (3, 21)}. Does this record describe a function from round number to score? Explain.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The plotted points show a relation. Is it a function? Explain using the input that proves your answer.



WORK SPACE AND ANSWER

ANSWER KEY

Input Output Check

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Is the relation {(0, 4), (1, 4), (2, 4)} a function? Explain briefly.	**Yes. Each input has exactly one output.**
2	Is the relation {(3, -1), (3, 2), (4, 0)} a function? Explain briefly.	**No. Input 3 has two outputs, -1 and 2.**
3	A rule says, "Multiply input x by 3, then add 1." What is the output when x = 2?	**7**
4	Is the relation {(-3, 0), (-2, 2), (-1, 4)} a function?	**Yes**
5	A relation includes the ordered pairs (4, 0) and (4, 6). Can the relation be a function? Explain briefly.	**No. Input 4 has two different outputs, 0 and 6.**
6	A rule says, "Multiply input x by -2, then add 4." What is the output when x = -1?	**6**

PART 2 · APPLY IT

1. **Yes; input 2 is paired with output 3.** Each day value has only one plotted number of new moves. The point above 2 has output 3.
2. **No. Round 2 is paired with scores 16 and 19.** A function cannot assign two different scores to the same round number. The repeated input is 2.

CHALLENGE

No. Input 1 is paired with outputs 2 and -2.

Accept equivalent wording that states each input has one output for a function. Accept ordered pairs written with or without a space after the comma.