

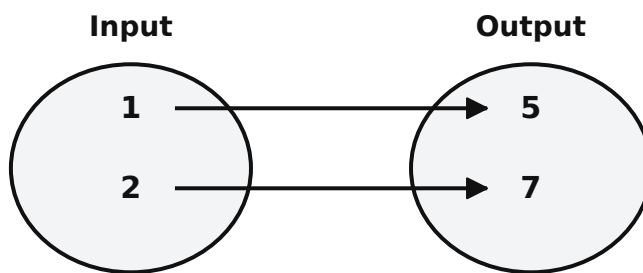
Grade 8 - Understanding Functions - Test Answer Key

Common Core 8.F.A.1, 8.F.A.2, 8.F.A.3 · maths-pdf.fr/en/

Use this answer key to score the functions test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

Grade 8 · Common Core State Standards: **8.F.A.1, 8.F.A.2, 8.F.A.3**

Question 1 - Function or not [3 pts]



A fixed version.

No: the input 2 has two outputs, 7 and 9. Removing the arrow from 2 to 9 gives a function.

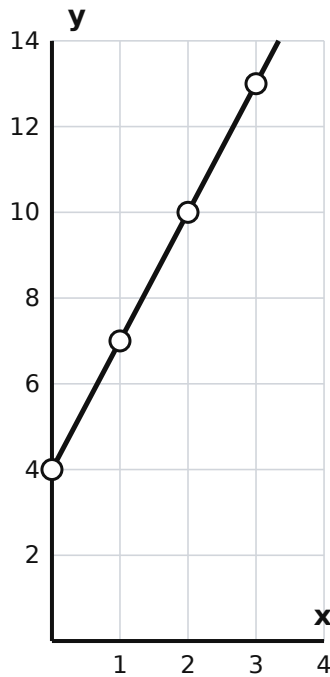
Scoring: 1 point for no, 1 point for the reason, 1 point for a correct fix.

Question 2 - Evaluate [2 pts]

- a. $4 \cdot 5 - 7 = 13$
- b. $(-3)^2 - 4 = 5$

Scoring: 1 point each.

Question 3 - Write a rule [3 pts]



Graph of $y = 3x + 4$.

Rate 3, initial value 4: $y = 3x + 4$.

When $x = 10$: $y = 34$.

Scoring: 1 point for the rate, 1 point for the rule, 1 point for 34.

Question 4 - Linear or nonlinear [3 pts]

It is nonlinear: the graph is a curve rather than a straight line, and the rate of change between (1, 1) and (3, 9) is 4 but it is smaller between earlier points.

Scoring: 1 point for nonlinear, 1 point for each reason.

Question 5 - Compare [3 pts]

A: rate 2, initial 3. B: rate 5, initial -1.

B has the greater rate; A has the greater initial value

Scoring: 1 point for each rate and initial value correctly found, 1 point for the comparisons.

Question 6 - Function in context [2 pts]

$$c = 3h + 5; c(4) = 17.$$

Scoring: 1 point for the rule. 1 point for $c(4) = 17$.

Question 7 - Domain and range [2 pts]

Inputs 0, 1, 2; outputs 4, 6, 8. Rule: $y = 2x + 4$.

Scoring: 1 point for the lists. 1 point for the rule.

Question 8 - Explain [2 pts]

No. A function only requires one output per input. Here each input has the single output 3.

Scoring: 1 point for no. 1 point for the reason.

Total**20 points**