

Brett Robbins Academic Consulting

Mathematics 10C Practice Test

Unit 4: Relations and Functions

10 Questions

Original practice questions written to the Alberta curriculum, in the style of past diploma examinations. Work through each question, then check your answers with the key at the end.

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, contact Brett for clarification.

Question 1

Which set of ordered pairs represents a function?

- A) $\{(2, 5), (3, 5), (4, 5), (5, 5)\}$
- B) $\{(1, 3), (1, 4), (2, 6), (3, 8)\}$
- C) $\{(0, 1), (0, 2), (0, 3), (0, 4)\}$
- D) $\{(-2, 7), (-2, -7), (3, 7), (4, 7)\}$

Question 2

The domain of the relation $\{(-3, 4), (0, -1), (2, 4), (5, 7)\}$ is

- A) $\{-1, 4, 7\}$
- B) $\{-3, -1, 0, 2\}$
- C) $\{-3, 0, 2, 4, 5\}$
- D) $\{-3, 0, 2, 5\}$

Question 3

The range of the relation $\{(1, -2), (3, 0), (3, 5), (6, -2)\}$ is

- A) $\{1, 3, 6\}$
- B) $\{-2, 0, 3, 5\}$
- C) $\{-2, 0, 5\}$
- D) $\{0, 5, 6\}$

Question 4

If $f(x) = 3x - 5$, then $f(4)$ is

- A) 2
- B) 12
- C) 17
- D) 7

Question 5

The vertical line test states that a graph represents a function if every vertical line drawn on the graph intersects the graph

- A) At most once
- B) Exactly once
- C) At least once
- D) More than once

Question 6

If $f(x) = x^2 - 3x + 1$, then the value of $f(-2)$ is ____

Question 7

A mapping diagram shows $1 \rightarrow 4$, $2 \rightarrow 4$, $3 \rightarrow 7$, and $4 \rightarrow 9$.

This relation is a function because

- A) Each output has exactly one input
- B) Each input has exactly one output
- C) No output value is repeated
- D) Every input and output is different

Question 8

The graph of a function is a line segment with endpoints $(-2, 3)$ and $(4, -1)$.

The domain of the function is

- A) $-2 \leq x \leq 4$
- B) $-1 \leq y \leq 3$
- C) $-2 < x < 4$
- D) $-1 < y < 3$

Question 9

A graph shows the distance, d km, that a cyclist is from home over time, t h.

The graph rises steadily from $(0, 0)$ to $(2, 30)$, is horizontal from $(2, 30)$

to $(3, 30)$, then falls steadily back to $(5, 0)$. The cyclist was stopped

during the interval

A) from 0 h to 2 h

B) from 3 h to 5 h

C) The cyclist was never stopped

D) from 2 h to 3 h

Question 10

If $f(x) = 2x + 7$ and $f(x) = 19$, then the value of x is ____

Answer Key

- | | | |
|------|-------|-------|
| 1. A | 5. A | 9. D |
| 2. D | 6. 11 | 10. 6 |
| 3. C | 7. B | |
| 4. D | 8. A | |

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