

Brett Robbins Academic Consulting

Mathematics 10C Practice Test

Unit 5: Linear Functions

25 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

A line rises 6 units for every 2 units it runs to the right.

The slope of the line is

- A) 3
C) -3
- B) $\frac{1}{3}$
D) 2

Question 2

The slope of the line passing through the points (1, 3) and (4, 9) is

- A) $\frac{1}{2}$
C) 2
- B) 3
D) 6

Question 3

For the line with equation $y = -4x + 7$, the slope and the y-intercept are

- A) Slope : 4
y – intercept : 7
- B) Slope : -4
y – intercept : 7
- C) Slope : -4
y – intercept : -7
- D) Slope : 7
y – intercept : -4

Question 4

The slope of the line passing through the points $(-2, 5)$ and $(3, 5)$ is

- A) undefined
- B) 1
- C) 0
- D) 5

Question 5

The graph of a line rises from left to right and crosses the y -axis at -3 .

An equation of this line could be

- A) $y = -2x - 3$
- B) $y = 2x + 3$
- C) $y = -3x + 2$
- D) $y = 2x - 3$

Question 6

An equation of the line with slope 3 that passes through the point $(2, -1)$ is

- A) $y = 3x - 7$
- B) $y = 3x + 5$
- C) $y = 3x - 1$
- D) $y = -3x + 5$

Question 7

The y -intercept of the line with equation $3x + 4y = 24$ is ____

Question 8

The equation $2x - y + 6 = 0$ written in slope – intercept form is

- A) $y = 2x + 6$
- B) $y = -2x + 6$
- C) $y = 2x - 6$
- D) $y = x + 6$

Question 9

A line that is parallel to the line with equation $3x + 2y = 6$ is

A) $y = \frac{2}{3}x - 1$

B) $y = -\frac{3}{2}x + 4$

C) $y = \frac{3}{2}x + 1$

D) $y = -\frac{2}{3}x + 5$

Question 10

A line has a slope of $-\frac{2}{3}$. The slope of a line perpendicular to it is

A) $-\frac{3}{2}$

B) $\frac{2}{3}$

C) $-\frac{2}{3}$

D) $\frac{3}{2}$

Question 11

The slope of the line passing through the points (2, 5) and (6, -3) is ____

Question 12

The x -intercept of the line with equation $y = 4x - 12$ is

A) -3

B) 3

C) -12

D) 12

Question 13

A gym charges a one - time sign - up fee of 30 dollars and 12 dollars per month.

The total cost, C dollars, after m months is given by

A) $C = 30m + 12$

B) $C = 12m + 30$

C) $C = 42m$

D) $C = 30m - 12$

Question 14

A line with a slope of $\frac{2}{3}$ passes through the point (4, 1).

When $x = 10$, the value of y is _____

Question 15

A point that lies on the line with equation $y = -2x + 5$ is

A) (0, -5)

B) (2, -1)

C) (3, 1)

D) (1, 3)

Question 16

A table of values for a linear relation is shown below.

x : 0, 1, 2, 3 y : 5, 8, 11, 14

An equation of this relation is

A) $y = 3x + 5$

B) $y = 5x + 3$

C) $y = 3x - 5$

D) $y = x + 5$

Question 17

A line parallel to $y = 3x - 1$ passes through the point (0, 4).

When $x = 4$, the value of y on this line is _____

Question 18

An equation of the line perpendicular to $y = \frac{1}{2}x + 3$ that passes through the point (0, -2) is

A) $y = -2x - 2$

B) $y = \frac{1}{2}x - 2$

C) $y = 2x - 2$

D) $y = -2x + 3$

A line decreases from left to right. It crosses the x -axis at -4 and crosses the y -axis at -2 . The slope of the line is

- A taxi ride costs an initial charge of 4.50 dollars plus 1.80 dollars per kilometre travelled. The total cost, in dollars, of a 12 km ride is _____

A) the total charge

B) the flat – rate fee

C) the charge per hour

D) the number of hours

The slope of the line passing through the points (3, 7) and (9, k) is $\frac{5}{6}$.

The value of k is _____

Question 23

The equation $y = -\frac{3}{4}x + 2$ written in general form, $Ax + By + C = 0$, is

A) $3x - 4y - 8 = 0$

B) $3x + 4y + 8 = 0$

C) $3x + 4y - 8 = 0$

D) $4x + 3y - 8 = 0$

Question 24

An equation of the line passing through the points $(-1, 2)$ and $(3, 10)$ is

A) $y = 2x$

B) $y = -2x + 4$

C) $y = \frac{1}{2}x + 4$

D) $y = 2x + 4$

Question 25

A tank contains 1200 L of water and drains at a rate of 15 L per minute.

The volume, in litres, of water remaining in the tank after 35 minutes is ____

Answer Key

- | | | |
|------|--------|-----------|
| 1. A | 10. D | 19. D |
| 2. C | 11. -2 | 20. 26.10 |
| 3. B | 12. B | 21. C |
| 4. C | 13. B | 22. 12 |
| 5. D | 14. 5 | 23. C |
| 6. A | 15. D | 24. D |
| 7. 6 | 16. A | 25. 675 |
| 8. A | 17. 16 | |
| 9. B | 18. A | |

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