

Brett Robbins Academic Consulting

Mathematics 10C Practice Test

Unit 6: Systems of Linear Equations

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

The solution to the system $y = 2x + 1$ and $y = -x + 7$ is

- A) (2, 5)
- B) (5, 2)
- C) (-2, 5)
- D) (2, -5)

Question 2

The solution to the system $x + y = 11$ and $y = 3x - 5$ is

- A) (7, 4)
- B) (4, 7)
- C) (3, 8)
- D) (4, -7)

Question 3

The system $y = 3x + 2$ and $y = 3x - 4$ has

- A) one solution
- B) no solution
- C) infinitely many solutions
- D) two solutions

Question 4

The solution to the system $2x + y = 10$ and $x - y = 2$ is

- A) (2, 4)
- B) (-4, 2)
- C) (4, 2)
- D) (4, -2)

Question 5

Which ordered pair is a solution to both $y = x + 3$ and $2x + y = 9$?

A) (1, 4)

B) (3, 6)

C) (4, 7)

D) (2, 5)

Question 6

When the system $y = 2x - 3$ and $3x + y = 12$ is solved, the value of x is ____

Question 7

The solution to the system $3x + 2y = 16$ and $x + y = 6$ is

A) (4, 2)

B) (2, 4)

C) (5, 1)

D) (3, 3)

Question 8

A theatre sells adult tickets for 12 dollars and child tickets for 8 dollars.

One evening, 25 tickets were sold for a total of 248 dollars.

The number of adult tickets sold is

A) 13

B) 10

C) 12

D) 15

Question 9

Which system of equations has infinitely many solutions?

A) $x + y = 5$

$$2x + 2y = 10$$

B) $y = 2x + 3$

$$y = 2x - 1$$

C) $y = x + 1$

$$y = -x + 1$$

D) $3x + y = 7$

$$3x + y = 9$$

Question 10

When the system $5x - 2y = 4$ and $3x + 2y = 12$ is solved by elimination, the value of y is ____

Question 11

The solution to the system $\frac{1}{2}x + y = 5$ and $x - y = 1$ is

A) (3, 4)

B) (5, 2)

C) (2, 5)

D) (4, 3)

Question 12

A jar contains only dimes and quarters. There are 30 coins in the jar, with a total value of 4.95 dollars. The number of dimes in the jar is

A) 13

B) 15

C) 20

D) 17

Question 13

The sum of two numbers is 36 and their difference is 8. The larger number is ____

Question 14

One rental company charges a 40 dollar fee plus 15 dollars per day.

A second company charges a 10 dollar fee plus 25 dollars per day.

The two companies charge the same total after

A) 2 days

B) 4 days

C) 3 days

D) 5 days

Question 15

If $3x - y = 5$ and $x + 2y = 11$, then the value of $x + y$ is

A) 5

B) 6

C) 8

D) 7

Question 16

When the system $4x + 3y = 25$ and $2x - 3y = -1$ is solved, the value of x is ____

Question 17

Cashews cost 18 dollars per kilogram and almonds cost 9 dollars per kilogram.

A store mixes cashews and almonds to make 12 kg of a mixture worth 171 dollars in total.

The mass of cashews in the mixture, in kilograms, is

A) 5

B) 7

C) 6

D) 8

Question 18

The cost graphs for two phone plans are drawn on the same axes, where x is the number of minutes used and y is the monthly cost, in dollars.

The graphs intersect at the point (150, 45). This means that

- A) Plan A costs 45 dollars more than Plan B when 150 minutes are used
- B) when 150 minutes are used, both plans cost 45 dollars
- C) when 45 minutes are used, both plans cost 150 dollars
- D) Plan B is cheaper than Plan A for every number of minutes

Question 19

The perimeter of a rectangle is 34 cm. The length is 3 cm more than the width.

The length of the rectangle, in centimetres, is ____

Question 20

The solution to the system $\frac{x}{2} + \frac{y}{3} = 4$ and $x - y = 3$ is

- A) (6, 3)
- B) (3, 6)
- C) (6, -3)
- D) (4, 3)

Question 21

The system $4x + 2y = 6$ and $2x + y = 3$ has

- A) no solution
- B) exactly one solution
- C) infinitely many solutions
- D) exactly two solutions

Question 22

Twice a number plus a second number is 19. The first number plus twice the second number is 17.

The first number is ____

Question 23

A school sells 350 tickets to a play. Adult tickets cost 10 dollars
and student tickets cost 6 dollars. Total ticket sales are 2620 dollars.
The number of adult tickets sold is

- | | |
|--------|--------|
| A) 120 | B) 220 |
| C) 150 | D) 130 |

Question 24

When the system $3x + 4y = 25$ and $2x - y = 2$ is solved, the value of y is ____

Question 25

The sum of the digits of a two-digit number is 11. The tens digit is 3
more than the units digit. The two-digit number is

- | | |
|-------|-------|
| A) 47 | B) 38 |
| C) 74 | D) 83 |

Answer Key

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

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