ALBERTA MATH 20-2 · UNIT 8 · 25 QUESTIONS

Linear Relations and Systems — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The slope of the line through the points (2, 3) and (6, 11) is**

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

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2 **The graph shows a line. Its equation in slope-intercept form is**

- A y = 4x - 3
- B y = 4x + 3
- C y = 2x - 3
- D y = -4x - 3

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3 **A plumber charges a $50 call-out fee plus $40 per hour of work. The rate of change of the total cost with respect to time is**

- A $50
- B $90 per hour
- C $40 per hour
- D $10 per hour

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4 **For the line y = -3x + 7, the slope and y-intercept are**

- A Slope: -3 y-intercept: 7
- B Slope: 3 y-intercept: 7
- C Slope: -3 y-intercept: -7
- D Slope: 7 y-intercept: -3

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5 A cyclist rides 150 km in 6 h at a constant speed. Her average speed, in kilometres per hour, to the nearest whole number, is _____

ANSWER _____

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6 The graph shows a line. The slope of the line is

A $\frac{4}{3}$

B $\frac{3}{4}$

C $-\frac{4}{3}$

D 4

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7 **A line passes through the points (1, 2) and (5, 10). Its equation in slope-intercept form is**

- **A** $y = 2x + 1$
- **B** $y = \frac{1}{2}x + 2$
- **C** $y = 2x - 2$
- **D** $y = 2x$

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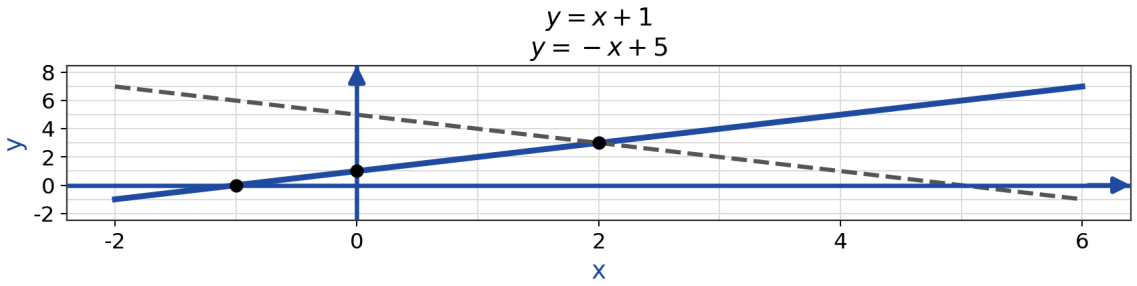
8 **The graphs of two lines are drawn on the same axes. The solution to the system is the point**



A (3, 2)

B (2, 3)

C (1, 4)

D (-2, 3)

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9 **The system of equations y = 2x + 3 and y = 2x - 5 has**

- **A** Infinitely many solutions
- **B** One solution, (0, 3)
- **C** No solution
- **D** One solution, (2, 7)

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10 **A taxi company charges $3.00 plus $1.50 per kilometre travelled. The total cost, in dollars, of a 12 km trip is ____**

ANSWER _____

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11 When the system y = 3x - 2 and 2x + y = 13 is solved, the value of x is

- A 3
- B 5
- C 7
- D 2

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12 When the system 3x + 2y = 16 and x - 2y = 0 is solved, the value of y is

- A 4
- B 2
- C 6
- D -2

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13 **A company has fixed costs of $800. Each candle it makes costs $4 and sells for $12. The number of candles that must be sold to break even is**

A 200

B 67

C 100

D 50

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14 **Two numbers have a sum of 47 and a difference of 9. The larger of the two numbers is ____**

ANSWER _____

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15 The solution to the inequality $3x - 5 > 10$ is

- A $x < 5$
- B $x > 15$
- C $x > 5$
- D $x \geq 5$

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16 The solution to the inequality $-2x + 4 \leq 12$ is

- A $x \leq -4$
- B $x \geq 4$
- C $x \leq 4$
- D $x \geq -4$

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17 **When the system 0.5x + y = 7 and x - y = 2 is solved, the solution is**

A (4, 6)

B (6, 4)

C (2, 5)

D (6, -4)

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18 **A food truck has monthly fixed costs of $1400. Each meal costs $6 to prepare and sells for $13. The number of meals that must be sold in a month to break even is ____**

ANSWER _____

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19 **A line with a slope of -2 passes through the point (3, 4). Its equation in slope-intercept form is**

- **A** y = -2x + 4
- **B** y = 2x + 10
- **C** y = -2x - 2
- **D** y = -2x + 10

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20 **The graph shows distance against time for a car trip at a constant speed. The rate of change of distance with respect to time is**

- **A** 150 km/h
- **B** 300 km/h
- **C** 75 km/h
- **D** 60 km/h

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21 **When the system 4x + 3y = 25 and 2x - 3y = -1 is solved, the value of y is _____**

ANSWER _____

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22 **Plan A charges $20 per month plus $0.10 per text message. Plan B charges $5 per month plus $0.25 per text message. The two plans cost the same when the number of text messages sent in a month is**

A 100

B 50

C 150

D 60

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23 **The solution to the inequality 4(x - 2) ≥ 3x + 1 is x ≥ a. The value of a is _____**

ANSWER _____

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24 The slope of the line through the points (-1, 4) and (3, -2) is

A $\frac{3}{2}$

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

C $\frac{2}{3}$

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

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25 One gym charges a $120 joining fee plus $35 per month. A second gym charges no joining fee and $55 per month. The number of months after which the total costs at the two gyms are equal is ____

ANSWER _____

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ANSWER KEY

1. B
2. A
3. C
4. A
5. 25
6. A
7. D
8. B
9. C
10. 21
11. A
12. B
13. C
14. 28
15. C
16. D
17. B
18. 200
19. D
20. C
21. 3
22. A
23. 9
24. D
25. 6

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