ALBERTA MATH 20-2 · UNIT 7 · 25 QUESTIONS

# Quadratic Functions — 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 graph shows a quadratic function. The vertex of the graph is**

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

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**2** **The graph shows a quadratic function. The maximum value of the function is**

- A -3
- B 2
- C 6
- D -6

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**3** The axis of symmetry of the graph of $y = (x + 5)^2 - 3$ is

- A $x = -5$
- B $x = 5$
- C $x = -3$
- D $x = 3$

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**4** The y-intercept of the graph of $y = 3x^2 - 2x + 8$ is

- A -2
- B 3
- C -8
- D 8

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5 **The x-coordinate of the vertex of the graph of $y = x^2 - 6x + 4$ is _____ Record your answer as a whole number.**

ANSWER _____

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6 **The x-intercepts of the graph of $y = (x - 2)(x + 6)$ are**

A -2 and 6

B 2 and 6

C -6 and 2

D -2 and -6

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**7** **The solutions to the equation $x^2 - 5x + 6 = 0$ are**

- **A** 2 and 3
- **B** -2 and -3
- **C** 1 and 6
- **D** -1 and -6

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**8** **The graph shows a parabola. An equation for the parabola is**

- **A** $y = (x - 1)^2 - 4$
- **B** $y = (x + 1)^2 - 4$
- **C** $y = (x + 1)^2 + 4$
- **D** $y = -(x + 1)^2 - 4$

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9 **The larger of the two solutions to the equation $x^2 - 4x - 21 = 0$ is _____ Record your answer as a whole number.**

ANSWER _____

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10 **The vertex of the graph of $y = (x - 1)(x - 5)$ is**

A (3, 4)

B (-3, -4)

C (1, 5)

D (3, -4)

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**11** **The solutions to the equation $2x^2 + 3x - 2 = 0$ are**

- **A** 2 and -0.5
- **B** -2 and 0.5
- **C** 2 and 0.5
- **D** -2 and -0.5

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**12** **The minimum value of the function $y = x^2 + 4x + 1$ is**

- **A** -3
- **B** -2
- **C** 1
- **D** 3

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13 **The graph shows the height of a ball after t seconds. The maximum height reached by the ball, in metres, is _____**

ANSWER _____

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14 **Which of the following functions has no x-intercepts?**

A $y = x^2 - 9$

B $y = (x + 2)^2 - 1$

C $y = -x^2 + 4$

D $y = x^2 + 2x + 5$

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**15** **A parabola has x-intercepts of -4 and 2 and passes through the point (0, -8). An equation for the parabola is**

- **A** $y = x^2 - 2x - 8$
- **B** $y = -x^2 + 2x - 8$
- **C** $y = x^2 + 2x - 8$
- **D** $y = x^2 + 2x + 8$

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**16** **Use the quadratic formula to solve $x^2 + 3x - 2 = 0$. The larger solution, to the nearest tenth, is _____**

ANSWER _____

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**17** **The function $y = x^2 - 8x + 19$ written in vertex form is**

- **A** $y = (x - 4)^2 + 3$
- **B** $y = (x - 4)^2 - 3$
- **C** $y = (x + 4)^2 + 3$
- **D** $y = (x - 8)^2 + 19$

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**18** **The range of the function $y = -(x - 3)^2 + 10$ is**

- **A** $y \geq 10$
- **B** $y \leq 10$
- **C** $y \leq 3$
- **D** all real numbers

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19 **A rectangle has a length of (x + 6) metres and a width of (x - 2) metres. The area of the rectangle is 48 m². The value of x is _____ Record your answer as a whole number.**

ANSWER _____

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20 **A ball is kicked from the ground. Its height, in metres, after t seconds is h(t) = -5t² + 30t. The ball lands on the ground after**

A 3 s

B 5 s

C 30 s

D 6 s

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**21** The graph shows a quadratic function. One x-intercept is at 5. The other x-intercept is

A 0

B 1

C -1

D -4

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**22** The smaller solution to the equation $3x^2 - 5x - 2 = 0$, to the nearest hundredth, is _____

ANSWER _____

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**23** **A farmer has 40 m of fencing to enclose a rectangular pen against a wall, so only three sides of the pen are fenced. The maximum possible area of the pen is**

- **A** 100 m²
- **B** 200 m²
- **C** 150 m²
- **D** 400 m²

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**24** **A theatre sells 200 tickets at a price of 10 dollars per ticket. For each increase of 1 dollar in price, 10 fewer tickets are sold. The ticket price, in dollars, that gives the maximum revenue is _____ Record your answer as a whole number.**

ANSWER _____

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25 **The graph of $y = 2(x - 1)^2 - 8$ crosses the x-axis at**

A -1 and 3

B 1 and 8

C -3 and 1

D -1 and -3

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **10.** | D | **19.** | 6 |
| **2.** | C | **11.** | B | **20.** | D |
| **3.** | A | **12.** | A | **21.** | C |
| **4.** | D | **13.** | 23 | **22.** | -0.33 |
| **5.** | 3 | **14.** | D | **23.** | B |
| **6.** | C | **15.** | C | **24.** | 15 |
| **7.** | A | **16.** | 0.6 | **25.** | A |
| **8.** | B | **17.** | A | | |
| **9.** | 7 | **18.** | B | | |

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