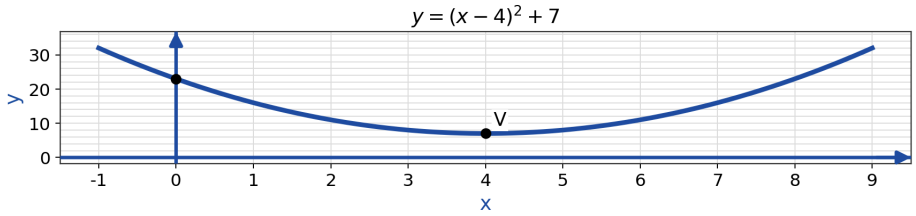
NUNAVUT MATH 20-2 · UNIT 7 · 25 QUESTIONS

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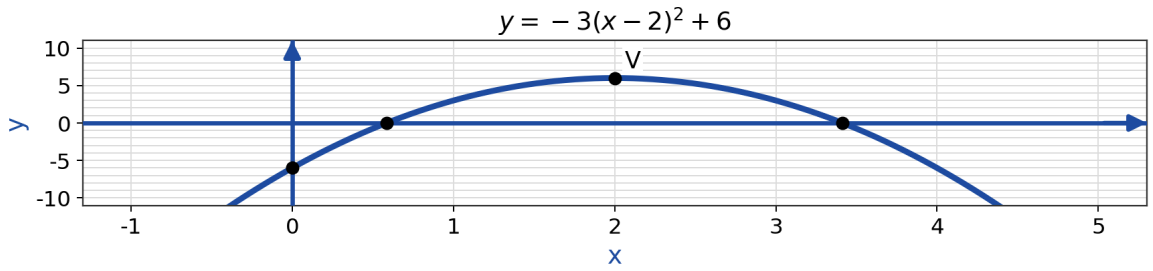
2 **The graph shows a quadratic function. The maximum value of the function is**



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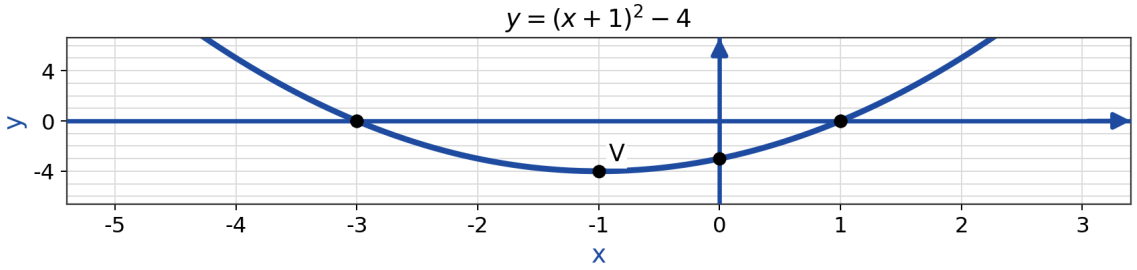
8 **The graph shows a parabola. An equation for the parabola is**



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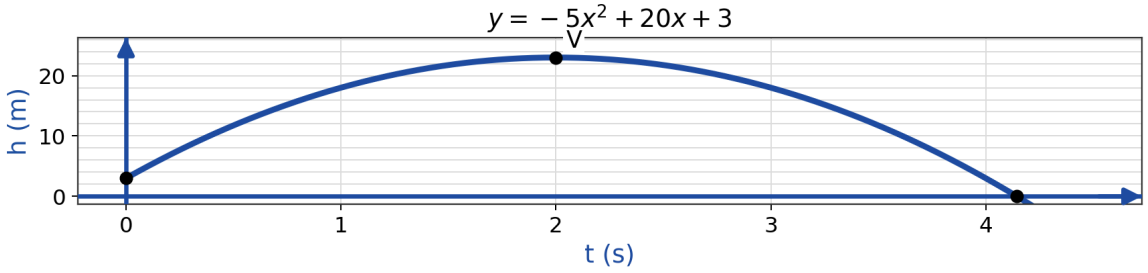
13 **The graph shows the height of a ball after t seconds. The maximum height reached by the ball, in metres, is _____**



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 $h(t) = -5t^2 + 30t$. The ball lands on the ground after**

- **A** 3 s
- **B** 5 s
- **C** 30 s
- **D** 6 s

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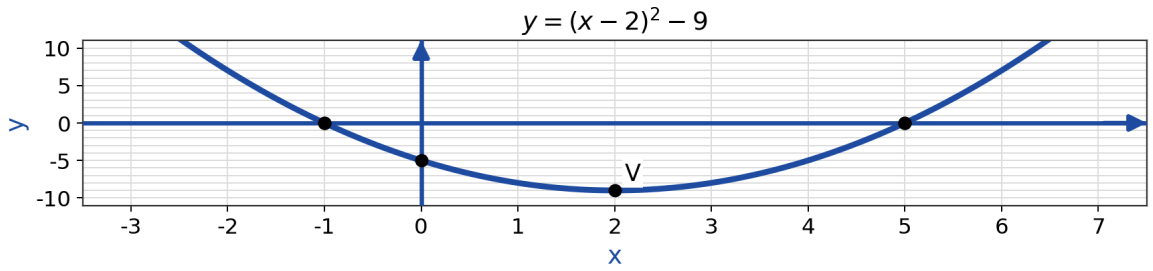
21 **The graph shows a quadratic function. One x-intercept is at 5. The other x-intercept is**



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 m^2
- **B** 200 m^2
- **C** 150 m^2
- **D** 400 m^2

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

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