NORTH DAKOTA ALGEBRA 2 · UNIT 1 · 25 QUESTIONS

Functions and Graphs — 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 **If f(x) = 2x + 3, then f(4) is**



A 9

B 11

C 10

D 12

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2 **If $g(x) = x^2 - 5x + 6$, then $g(3)$ is**

A 3

B -3

C 6

D 0

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3 **If $f(x) = 3x - 7$, then $f(-2)$ is**

A -13

B 13

C 1

D -1

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4 **The domain of $f(x) = \sqrt{x - 5}$ is**

- **A** all real numbers
- **B** $x > 5$
- **C** $x \geq 5$
- **D** $x \leq 5$

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5 **The domain of $f(x) = 1/x + 2$ is**

- **A** $x \neq -2$
- **B** all real numbers
- **C** $x \neq 2$
- **D** $x \geq -2$

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6 **The range of $f(x) = x^2 - 4$ is**

A $y \leq -4$

B $y > -4$

C $y \geq -4$

D $y \geq 4$

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7 **The point (-2, 5) lies on the graph of $y = f(x)$. The image of this point on the graph of $y = f(x - 3) + 2$ is**

A (1, 3)

B (-5, 3)

C (1, 7)

D (-5, 7)

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8 The vertex of $y = (x - 3)^2 + 5$ is



A (-3, -5)

B (-3, 5)

C (3, -5)

D (3, 5)

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9 **The inverse of f(x) = 3x + 4 is**



A $f^{-1}(x) = x + 4/3$

B $f^{-1}(x) = x - 4/3$

C $f^{-1}(x) = 3x - 4$

D $f^{-1}(x) = x/3 + 4$

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10 Given $f(x) = 2x + 1$ and $g(x) = x^2$, the value of $(f \circ g)(3)$ is



A 10

B 7

C 37

D 19

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11 Given f(x) = x + 3 and g(x) = 2x - 1, the value of (g ° f)(2) is

- A 9
- B 7
- C 5
- D 11

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12 Let f(x) = 2x for x < 0 and f(x) = x + 3 for x ≥ 0. The value of f(-2) + f(3) is

- A 1
- B -2
- C 2
- D 10

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13 **The sum of the solutions of |x - 4| = 3 is**

A 6

B 10

C 8

D 4

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14 **The average rate of change of $f(x) = x^2$ on the interval $1 \le x \le 4$ is**



A 6

B 5

C 15

D 4

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15 **Which statement about the relation {(1, 2), (2, 3), (1, 4)} is true?**

- **A** It is a function because it has three pairs
- **B** It is not a function because 2 has two outputs
- **C** It is a function because every output is different
- **D** It is not a function because 1 has two outputs

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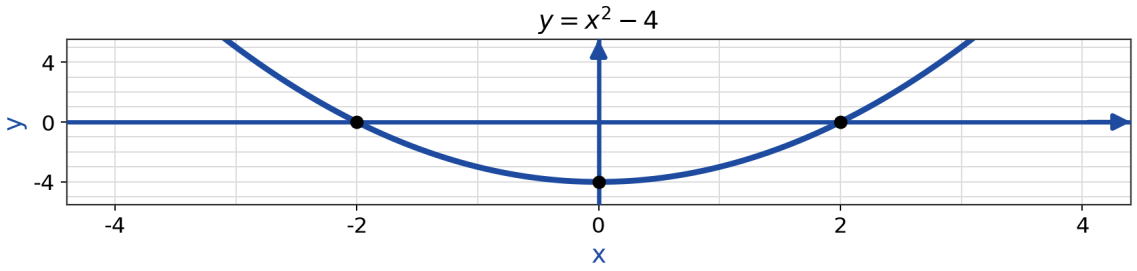
16 **The graph below shows y = x² - 4. The vertex of the graph is**



- **A** (2, 0)
- **B** (0, 4)
- **C** (0, -4)
- **D** (-4, 0)

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17 **The x-intercept of y = 2x - 6 is**

A -3

B 6

C 3

D -6

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18 **A linear function passes through (0, 3) and (2, 7). Its slope is**



A 3

B 2

C $\frac{1}{2}$

D 4

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19 **The function $f(x) = x^3$ is**

A neither even nor odd

B both even and odd

C even

D odd

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20 **The point (4, -2) lies on the graph of y = f(x). The corresponding point on the graph of the inverse, $y = f^{-1}(x)$, is**

A (2, -4)

B (4, 2)

C (-2, 4)

D (-4, 2)

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21 **Compared to the graph of y = f(x), the graph of y = -2f(x) has been**

A reflected in the x-axis and vertically compressed by a factor of 2

B reflected in the y-axis and vertically stretched by a factor of 2

C vertically stretched by a factor of 2 only

D reflected in the x-axis and vertically stretched by a factor of 2

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22 **If $f(x) = x^2 + 1$, then the positive solution of $f(x) = 10$ is**

ANSWER _____

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23 If f(x) = x - 1/x + 2, then f(3) is

- A $\frac{1}{2}$
- B $\frac{2}{5}$
- C 2
- D $\frac{4}{5}$

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24 The larger zero of $y = x^2 - 5x + 6$ is

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

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25 **The domain of y = f(x) is -2 ≤ x ≤ 6. The domain of y = f(x + 2) is**

A $4 \leq x \leq 12$

B $-4 \leq x \leq 4$

C $0 \leq x \leq 8$

D $-2 \leq x \leq 6$

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ANSWER KEY

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

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