ARIZONA ALGEBRA II · 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) = 3x + 2, then f(4) is**



A 14

B 11

C 17

D 10

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2 **If $g(x) = x^2 - 3x + 1$, then $g(-1)$ is**

- A 5
- B -1
- C 3
- D -3

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3 **The domain of $f(x) = \sqrt{2x - 6}$ is**

- A all real numbers
- B $x > 3$
- C $x \geq 3$
- D $x < 3$

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4 **The domain of f(x) = 1/x + 4 is**

- **A** all real numbers
- **B** $x \neq 4$
- **C** $x \geq -4$
- **D** $x \neq -4$

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5 **The range of $f(x) = x^2 - 5$ is**

- **A** $y \leq -5$
- **B** $y \geq -5$
- **C** $y > -5$
- **D** $y \geq 5$

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



A (3, 2)

B (-3, 2)

C (3, -2)

D (-3, -2)

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7 **The point (2, 7) lies on the graph of y = f(x). The image of this point on the graph of y = f(x - 1) + 2 is**

A (1, 9)

B (3, 5)

C (3, 9)

D (1, 5)

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



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

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

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

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

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

A 23

B 14

C 27

D 7

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



A 2

B 5

C 10

D 1

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11 Let $f(x) = 2x$ for $x < 0$ and $f(x) = x^2 + 1$ for $x \geq 0$. The value of $f(-3) + f(3)$ is

- A 16
- B 4
- C -2
- D 10

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12 The sum of the solutions of $|x - 4| = 6$ is

- A 8
- B -8
- C 12
- D 4

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13 The average rate of change of $f(x) = x^2 - 2x$ on the interval $1 \leq x \leq 4$ is



A 3

B 6

C 9

D 2

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

- A It is a function because it has three pairs
- B It is a function because every output is different
- C It is not a function because 3 has two outputs
- D It is not a function because 2 has two outputs

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15 **For $y = x^2 - 4$, the vertex is**

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

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16 **The x-intercept of y = 2x - 8 is**

A 4

B -4

C 8

D -8

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17 **A linear function passes through (2, 3) and (5, 12). Its slope is**



A 2

B 3

C 9

D $\frac{1}{3}$

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18 **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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19 **The point (4, 1) lies on the graph of $y = f(x)$. The corresponding point on the graph of the inverse $y = f^{-1}(x)$ is**

- A (-1, 4)
- B (1, 4)
- C (4, 1)
- D (-4, 1)

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20 **Compared to the graph of y = f(x), the graph of y = 3f(x + 2) has been**

A Stretched by 3, shifted left 2

B Stretched by 3, shifted right 2

C Compressed by 3, shifted left 2

D Stretched horizontally by 3, shifted left 2

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21 **If f(x) = x² + 4, then the positive solution of f(x) = 20 is**

ANSWER _____

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22 If $f(x) = \frac{x + 2}{x - 1}$, then f(0) is

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

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23 The smaller zero of $y = x^2 - 5x + 6$ is

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

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24 The domain of $y = f(x)$ is $-2 \leq x \leq 2$. The domain of $y = f(x + 4)$ is

A $-6 \leq x \leq -2$

B $2 \leq x \leq 6$

C $-2 \leq x \leq 2$

D $-4 \leq x \leq 0$

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25 If $f(x) = 5x^2 - 1$, then $f(2)$ is

ANSWER _____

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ANSWER KEY

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

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