ARKANSAS 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) = 5x - 4, then f(6) is**



A 26

B 34

C 22

D 30

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

- **A** 2
- **B** 8
- **C** 14
- **D** 20

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3 **The domain of $f(x) = \sqrt{2x - 10}$ is**

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

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4 **The domain of $f(x) = \frac{1}{x + 7}$ is**

A all real numbers

B $x \neq 7$

C $x \geq -7$

D $x \neq -7$

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5 **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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6 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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7 **The point (-2, 9) lies on the graph of y = f(x). The image of this point on the graph of y = f(x - 3) + 2 is**

A (-5, 11)

B (1, 7)

C (-5, 7)

D (1, 11)

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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 $f(x) = 2x + 5$ and $g(x) = x^2 - 1$, the value of $(f \circ g)(3)$ is**

A 21

B 17

C 23

D 11

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10 Given f(x) = x - 2 and g(x) = 3x + 1, the value of (g ° f)(4) is



A 13

B 7

C 5

D 19

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

- A 6
- B 12
- C 15
- D 9

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

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

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



A 6

B 5

C 4

D 3

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14 **Which statement about the relation {(2, 5), (3, 6), (2, 7)} 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 $y = x^2 + 2$, the vertex is**

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

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16 **The x -intercept of y = 4x - 12 is**

A 3

B -3

C 12

D -12

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17 **A linear function passes through (2, 5) and (6, 17). Its slope is**



A 3

B 4

C $\frac{1}{3}$

D 12

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

A even

B neither even nor odd

C odd

D both even and odd

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19 **The point (4, 7) lies on the graph of y = f(x). The corresponding point on the graph of the inverse, $y = f^{-1}(x)$, is**

A (4, 7)

B (7, 4)

C (-7, 4)

D (-4, 7)

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

A vertically stretched by a factor of 3 and shifted right 2 units

B vertically compressed by a factor of 3 and shifted left 2 units

C vertically stretched by a factor of 3 and shifted left 2 units

D horizontally stretched by a factor of 3 and shifted left 2 units

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21 **If $f(x) = x^2 + 1$, then the positive solution of $f(x) = 26$ is**

ANSWER _____

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22 If $f(x) = \frac{3x - 2}{x + 1}$, then f(3) is

- A $\frac{7}{4}$
- B $\frac{7}{2}$
- C $\frac{1}{4}$
- D 7

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23 The larger zero of $y = x^2 - 5x - 14$ is

- A -2
- B 7
- C 2
- D -7

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24 The domain of y = f(x) is -1 ≤ x ≤ 6. The domain of y = f(x - 2) is

- A -3 ≤ x ≤ 4
- B -1 ≤ x ≤ 6
- C 1 ≤ x ≤ 8
- D 3 ≤ x ≤ 10

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25 If f(x) = 6 - 2x, then f(-4) is

- A 14
- B -2
- C 2
- D -14

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ANSWER KEY

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

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