ARKANSAS PRECALCULUS · UNIT 1 · 25 QUESTIONS

Functions and Transformations — 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 $f(x) = 3x^2 - 2x + 4$, then $f(2)$ is**



A 8

B 12

C 10

D 14

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2 **If f(x) = -x + 7, then f(5) is**

- A 12
- B 2
- C -2
- D 7

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3 **The domain of $f(x) = \sqrt{3x - 9}$ is**

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

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

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

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

- **A** $y \geq 5$
- **B** $y \leq 5$
- **C** $y > 0$
- **D** all real numbers

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6 **The inverse of f(x) = 2x + 6 is**



A $f^{-1}(x) = \frac{x - 6}{2}$

B $f^{-1}(x) = \frac{x + 6}{2}$

C $f^{-1}(x) = 2x - 6$

D $f^{-1}(x) = \frac{x}{2} + 6$

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7 **If f(x) = x + 2 and g(x) = 3x, then f(g(2)) is**

A 6

B 7

C 8

D 9

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8 **The function $f(x) = x^5 - 2x$ is**

A even

B neither even nor odd

C both even and odd

D odd

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9 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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10 **The graph of y = f(x - 4) + 3 is the graph of y = f(x) shifted**

- A 4 units left and 3 units down
- B 4 units right and 3 units up
- C 4 units right and 3 units down
- D 4 units left and 3 units up

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11 **The graph of y = -f(x) is the graph of y = f(x) reflected across the**

- A y-axis
- B origin
- C x-axis
- D line y = x

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12 **If $f(x) = x^2$ and $g(x) = f(x + 2)$, then $g(1)$ is**

A 1

B 3

C 4

D 9

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13 **Compared with $y = x^2$, the graph of $y = 2(x + 1)^2$ is stretched vertically by a factor of 2 and**



A shifted left 1 unit

B shifted right 1 unit

C shifted up 1 unit

D shifted down 1 unit

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14 **If f(x) = 4x - 3, then the value of x for which f(x) = 17 equals**

ANSWER _____

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15 **For f(x) = x^2 + 2 and g(x) = 3x, the value of (f - g)(2) equals**

ANSWER _____

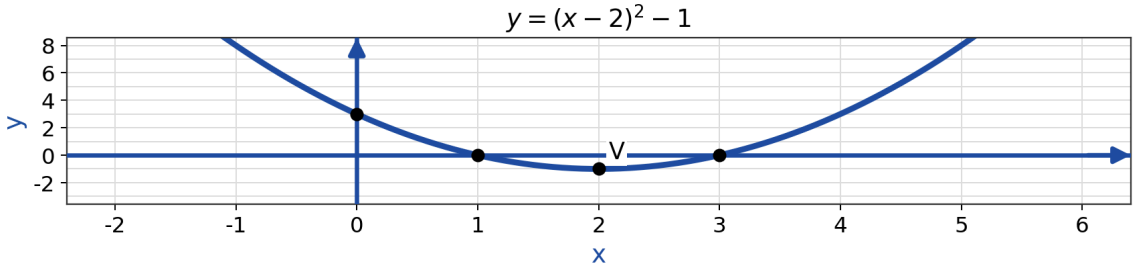
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16 **The x-intercept of f(x) = 2x - 10 equals**

ANSWER _____

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17 **The graph shows the parabola y = (x - 2)² - 1. The vertex is**



A (2, -1)

B (-2, -1)

C (2, 1)

D (-2, 1)

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18 **Which function is decreasing on its entire domain?**

A f(x) = 3x + 4

B f(x) = -3x + 4

C f(x) = x²

D f(x) = |x|

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19 **A graph passes the vertical line test. This means the graph represents**



A. A circle

B. A relation only

C. A function

D. No relation

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20 The function f(x) = |x - 3| + 1 has its lowest point at

- A (1, 3)
- B (-3, 1)
- C (3, -1)
- D (3, 1)

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21 If f(x) = x + 1 for x ≥ 0 and f(x) = x - 1 for x < 0, then f(-2) is

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

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22 The average rate of change of $f(x) = x^2$ from $x = 1$ to $x = 3$ is

- A 2
- B 3
- C 5
- D 4

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23 If f is one to one and $f(4) = 13$, then $f^{-1}(13)$ equals

ANSWER _____

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24 The domain of $f(x) = \frac{x + 1}{x + 2}$ is all real numbers except

- **A** x = 1
- **B** x = 2
- **C** x = 0
- **D** x = -2

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25 The y-intercept of f(x) = -2x + 9 is

- **A** 9
- **B** -9
- **C** 2
- **D** -2

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ANSWER KEY

1. B
2. B
3. C
4. D
5. A
6. B
7. C
8. D
9. A
10. B
11. C
12. D
13. A
14. 5
15. 0
16. 5
17. A
18. B
19. C
20. D
21. C
22. D
23. 4
24. D
25. A

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