ARIZONA 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 $f(x) = 3x^2 - 2x + 5$, then $f(2)$ is**



A 15

B 9

C 21

D 13

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Flag a mistake

2 **If g(x) = 4 - 5x, then g(-3) is**

A 19

B -11

C -19

D 11

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3 **If f(x) = x + 4 and g(x) = 2x, then f(g(3)) is**



A 7

B 12

C 14

D 10

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4 If $f(x) = 2x - 1$ and $g(x) = x^2$, then $g(f(3))$ is

- A 25
- B 36
- C 11
- D 49

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

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

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6 **The domain of $f(x) = \frac{1}{x - 2}$ is**

A $x \geq 2$

B $x \neq -2$

C all real numbers

D $x \neq 2$

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7 **The range of $f(x) = x^2 + 3$ is**

A $y \geq 0$

B $y \leq 3$

C $y > 3$

D $y \geq 3$

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



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

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

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

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

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9 **The inverse of $f(x) = \frac{x}{3} - 2$ is**

- **A** $f^{-1}(x) = 3x - 6$
- **B** $f^{-1}(x) = \frac{x}{3} + 2$
- **C** $f^{-1}(x) = 3x + 2$
- **D** $f^{-1}(x) = 3x + 6$

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

- **A** both even and odd
- **B** odd
- **C** neither even nor odd
- **D** even

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11 **The function $f(x) = x^3 - 4x$ is**

A odd

B even

C neither even nor odd

D both even and odd

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12 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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13 **The graph of $y = x^2$ shifted left 4 and up 1 is**



A $y = (x - 4)^2 + 1$

B $y = x^2 + 4$

C $y = (x + 4)^2 + 1$

D $y = (x + 4)^2 - 1$

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

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

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15 **Compared with y = f(x), the graph of y = f(2x) is**

- **A** stretched horizontally by a factor of 2
- **B** compressed vertically by a factor of $\frac{1}{2}$
- **C** shifted right by 2
- **D** compressed horizontally by a factor of $\frac{1}{2}$

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16 If $f(x) = x^2 + 1$ and $g(x) = 3x$, then $f(g(2))$ is

- A 19
- B 25
- C 37
- D 13

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17 A function passes through (0, 2) and (4, 10). Its slope is

- A 2
- B $\frac{1}{2}$
- C 3
- D 8

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18 **The graph shows $y = x^2 - 2$. The vertex is**

A (2, 0)

B (0, 2)

C (-2, 0)

D (0, -2)

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19 **The x-intercept of $y = 3x - 12$ is**

A 12

B -12

C -4

D 4

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20 The zeros of $f(x) = x^2 - 9$ are

- A 9, -9
- B 3 only
- C -3 only
- D -3, 3

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21 Let $f(x) = 2x$ for $x < 0$ and $f(x) = x + 1$ for $x \geq 0$. Then $f(-2)$ is

- A -1
- B 4
- C -4
- D 3

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22 **Which function is one to one**

A $f(x) = x^2$

B $f(x) = 2x + 1$

C $f(x) = |x|$

D $f(x) = 5$

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23 **The function $f(x) = (x - 1)^2$ is decreasing on**



A all real numbers

B $x > 1$

C $x < 1$

D $x > 0$

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24 **If $f(x) = 4x^2 - 3$, then $f(-2)$ is**

ANSWER

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25 **If $f(5) = 18$ and f is one to one, then $f^{-1}(18)$ is**

ANSWER

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ANSWER KEY

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

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