ARIZONA ALGEBRA II · UNIT 2 · 25 QUESTIONS

Polynomials and Rational Functions — 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 **The product (x + 3)(x - 2) is**

- **A** $x^2 + 5x - 6$
- **B** $x^2 + x - 6$
- **C** $x^2 + x + 6$
- **D** $x^2 - x - 6$

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2 **The product (2x - 1)(x + 4) is**

A $2x^2 - 7x - 4$

B $2x^2 + 9x - 4$

C $2x^2 + 7x + 4$

D $2x^2 + 7x - 4$

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3 **The factored form of $x^2 + 7x + 12$ is**



A (x + 12)(x + 1)

B (x - 3)(x - 4)

C (x + 6)(x + 2)

D (x + 3)(x + 4)

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4 **The factored form of $x^2 - 9x + 20$ is**

- **A** $(x - 4)(x - 5)$
- **B** $(x + 10)(x - 2)$
- **C** $(x + 4)(x + 5)$
- **D** $(x - 10)(x - 2)$

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5 **The larger zero of $x^2 - 3x - 10$ is**

- **A** 5
- **B** 10
- **C** -2
- **D** -5

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6 **The degree of $3x^4 - 2x^2 + 5$ is**

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

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7 **Let $P(x) = x^3 - 2x^2 + 3$. The value of $P(2)$ is**

- A -1
- B 7
- C 3
- D 11

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8 The quotient $\frac{x^2 + 5x + 6}{x + 2}$ is



A x + 3

B x + 4

C x + 2

D x - 3

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9 As $x \to \infty$, the graph of $y = -2x^3$ approaches

- A ∞
- B $-\infty$
- C 0
- D 2

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10 The domain of $y = \frac{x + 1}{x - 3}$ is all real numbers except

- A $x \geq 3$
- B $x = -1$
- C $x = 3$
- D all real numbers

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11 The vertical asymptote of $y = \frac{2}{x + 5}$ is



A x = -5

B x = -2

C x = 5

D x = 2

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12 The horizontal asymptote of $y = \frac{3x}{x + 2}$ is



A $y = 2$

B $y = 1$

C $y = 3$

D $y = 0$

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13 The graph of $y = \frac{x^2 - 4}{x - 2}$ has a hole at x =

A 2

B 4

C 0

D -2

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14 Simplify $\frac{x^2 - 1}{x - 1}$ for $x \neq 1$.

A $x^2 + 1$

B $x + 1$

C $2x$

D $x - 1$

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15 The sum $\frac{1}{x} + \frac{1}{2}$ is

A $\frac{x + 2}{2x}$

B $\frac{2 + x}{x}$

C $\frac{1}{2x}$

D $\frac{2}{x + 2}$

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16 **The sum of the solutions of $x^2 = 49$ is**



A 7

B 14

C 0

D -14

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17 **The discriminant of $x^2 + 6x + 9$ is 0. The equation has**

- A no roots
- B no real roots
- C one repeated real root
- D two distinct real roots

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18 **The sum $(3 + 2i) + (1 - 4i)$ is**

- A $4 - 2i$
- B $4 + 2i$
- C $4 + 6i$
- D $2 - 2i$

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19 **The product (2i)(3i) is**

A 6

B -6

C -6i

D 6i

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20 The vertex of $y = x^2 - 8x + 15$ is



A (4, 1)

B (-4, -1)

C (4, -1)

D (8, 15)

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21 Let $P(x) = 2x^3 - x + 4$. The value of $P(2)$ is

ANSWER _____

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22 The product of the zeros of $x^2 - 7x + 12$ is

ANSWER _____

Understand It with Pulse | Flag a mistake

23 The larger zero of $(x - 3)(x + 6) = 0$ is

A -6

B -3

C 3

D 6

Understand It with Pulse | Flag a mistake

24 Let $P(x) = x^2 + 3x - 5$. The value of $P(-1)$ is

- A -7
- B 3
- C -3
- D 7

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25 For $y = x^2 - 4x + 3$, the vertex is

- A (2, -1)
- B (-2, 3)
- C (1, 0)
- D (3, 0)

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ANSWER KEY

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

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