ARKANSAS 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 factored form of $x^2 + 5x + 6$ is**



A (x + 2)(x + 3)

B (x + 1)(x + 6)

C (x - 2)(x - 3)

D (x + 6)(x - 1)

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

- **A** $(x - 3)(x - 4)$
- **B** $(x - 2)(x - 6)$
- **C** $(x + 3)(x + 4)$
- **D** $(x - 12)(x - 1)$

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

- **A** $(2x + 3)(x + 1)$
- **B** $(2x - 1)(x - 3)$
- **C** $(2x + 1)(x + 3)$
- **D** $(x + 1)(x + 3)$

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4 **The zeros of $y = (x - 2)(x + 5)$ are**

A 2 and 5

B -2 and -5

C -2 and 5

D 2 and -5

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

A 2

B -2

C 6

D 10

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6 **If $f(x) = x^3 + 2x^2 - 5x + 3$, then $f(-1)$ is**

- A 1
- B 9
- C -9
- D 5

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

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

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8 **For $f(x) = -x^3 + 2x$, as x approaches positive infinity, the value of f(x) approaches**

A positive infinity

B 0

C 2

D negative infinity

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9 The vertical asymptote of $y = \frac{1}{x - 6}$ is



A x = 6

B x = -6

C y = 6

D y = 0

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10 The horizontal asymptote of $y = \frac{2x + 1}{x - 3}$ is



A y = 1

B y = 2

C y = 3

D y = -3

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

A -2

B 4

C 2

D 0

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Flag a mistake

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



A x - 3

B x + 2

C x - 2

D x + 3

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13 The sum of the roots of $x^2 - 9x + 20 = 0$ is



A 9

B 20

C -9

D 4

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14 The product of the roots of $x^2 + 6x + 8 = 0$ is

- A -6
- B 8
- C -8
- D 6

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15 The zero 1 of $y = (x - 1)^2(x + 3)$ has multiplicity

- A 1
- B 3
- C 2
- D 4

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16 The domain of $y = \frac{x}{x^2 - 9}$ excludes

- **A** 0 only
- **B** 3 only
- **C** -3 only
- **D** -3 and 3

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17 The factored form of $x^3 - 8$ is

- **A** $(x - 2)(x^2 + 2x + 4)$
- **B** $(x - 2)(x^2 - 2x + 4)$
- **C** $(x + 2)(x^2 + 2x + 4)$
- **D** $(x - 8)(x^2 + 8)$

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18 The number of real solutions of $x^2 + 4x + 5 = 0$ is

- A 2
- B 0
- C 1
- D 5

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19 The leading coefficient of $-2x^4 + 3x^2 - 7$ is

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

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20 The simplified form of $\frac{x^2 - 5x + 6}{x - 2}$, for $x \neq 2$, is

- **A** x + 3
- **B** x - 2
- **C** x + 2
- **D** x - 3

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21 If $f(x) = x^2 - 4x + 7$, then f(3) is

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

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22 The number of real zeros of $y = x^3 - 4x$ is

- A 1
- B 3
- C 2
- D 4

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23 The equation with roots 1 and -4 is

- A $x^2 - 3x - 4 = 0$
- B $x^2 + 4x - 1 = 0$
- C $x^2 + 3x - 4 = 0$
- D $x^2 - 4x + 1 = 0$

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24 **The expanded form of (2x - 3)(x + 4) is**

- **A** $2x^2 - 5x - 12$
- **B** $2x^2 + 12x - 3$
- **C** $2x^2 - 12$
- **D** $2x^2 + 5x - 12$

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25 **If $f(x) = 2x^3 - x^2 + 3$, then f(2) is ____**

ANSWER _____

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ANSWER KEY

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

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