YUKON PRE-CALCULUS 12 (MPREC12) · UNIT A · 10 QUESTIONS

Transformations and Polynomial 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 **When factored completely, $x^3 + 27$ is**

- **A** $(x + 3)^3$
- **B** $(x + 3)(x^2 + 3x + 9)$
- **C** $(x - 3)(x^2 - 3x + 9)$
- **D** $(x + 3)(x^2 - 3x + 9)$

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2 **The solutions of $x^2 + 2x - 15 = 0$ are**

- **A** 3 and 5
- **B** -3 and 5
- **C** 3 and -5
- **D** -3 and -5

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3 **For $P(x) = 2x^2 - 5x + 3$, the remainder on division by $x - 1$ is**

ANSWER _____

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4 For $f(x) = -x^4 + 3x$, as $x \to +\infty$, $f(x) \to$

- A 0
- B $+\infty$
- C $-\infty$
- D 3

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5 For $y = x^2 - 4x + 3$, the vertex of this parabola is

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

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6 For $f(x) = (x + 3)(x - 1)^3$, at $x = -3$ the graph

- A has a vertical asymptote
- B touches and turns back
- C crosses straight through
- D has a hole

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7 When expanded, $(x + 2)^3$ is

- A $x^3 + 2x^2 + 4x + 8$
- B $x^3 + 6x^2 + 6x + 8$
- C $x^3 + 6x^2 + 12x + 8$
- D $x^3 + 3x^2 + 12x + 8$

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8 The y-intercept of $f(x) = -x^3 + 2x^2 + 9$ is

- A 9
- B -9
- C 2
- D 0

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9 If (0, -4) lies on y = f(x), then on y = f(x + 5) - 3 the point is

- A (-5, -7)
- B (5, -7)
- C (-5, -1)
- D (5, -1)

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10 **A polynomial of degree 3, with leading coefficient 2, can have at most**

- **A** 6 real zeros
- **B** 2 real zeros
- **C** 4 real zeros
- **D** 3 real zeros

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ANSWER KEY

1. D
2. C
3. 0
4. C
5. B
6. C
7. C
8. A
9. A
10. D

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