Chapter 6

Exponents and Polynomials
Which one of the following is true?

A.) In the polynomial $3x^2 - 5x + 13$, the coefficient of $x$ is 5.

B.) The degree of $3x^2 - 7x + 9x^3 + 5$ is 2.

C.) $2x^2 - 8x + 6 - x^2 - 3x + 5 = x^2 - 5x + 1$ for any value of $x$. 
Which one of the following is true?

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C.) $2x^2 - 8x + 6 - x^2 - 3x + 5 = x^2 - 5x + 1$ for any value of $x$.

Correct Answer: C
Which one of the following is true?

A.) \( \frac{1}{5x^2} + \frac{1}{3x} \) is a binomial.

B.) A polynomial is a sum of monomials.

C.) In the polynomial \( 5x + 4x^2 \), the leading coefficient is 5.
Which one of following is true?

A.) \[ \frac{1}{5x^2} + \frac{1}{3x} \] is a binomial.

B.) A polynomial is a sum of monomials.

C.) In the polynomial \( 5x + 4x^2 \), the leading coefficient is 5.

**Correct Answer: B**
Which one of the following is true?

A.) \( 4x^3 \cdot 3x^4 = 12x^{12} \)

B.) \( 5x^2 \cdot 4x^6 = 9x^8 \)

C.) \( y - 1 \quad y^2 + y + 1 = y^3 - 1 \)
Which one of the following is true?

A.) $4x^3 \cdot 3x^4 = 12x^{12}$

B.) $5x^2 \cdot 4x^6 = 9x^8$

C.) $y - 1 \quad y^2 + y + 1 = y^3 - 1$

Correct Answer: C
Which one of the following is true?

A.) \[3 + 4^2 = 3^2 + 4^2\]

B.) \[2y + 7^2 = 4y^2 + 14y + 49\]

C.) \[3x^2 + 2 \quad 3x^2 - 2 = 9x^2 - 4\]
Which one of the following is true?

A.) \[ 3 + 4^2 = 3^2 + 4^2 \]

B.) \[ 2y + 7^2 = 4y^2 + 14y + 49 \]

C.) \[ 3x^2 + 2 \quad 3x^2 - 2 = 9x^2 - 4 \]

Correct Answer: C
Which one of the following is not necessarily true?

A.) A polynomial in 2 variables can have a degree less than 2.

B.) The sum of two polynomials of degree 4 is degree 4.

C.) The sum of trinomials could be a binomial.
Which one of the following is not necessarily true?

A.) A polynomial in 2 variables can have a degree less than 2.

B.) The sum of two polynomials of degree 4 is degree 4.

C.) The sum of trinomials could be a binomial.

Correct Answer: B
Which one of the following is true?

A.) \[2x + 3 - 5y \quad 2x + 3 + 5y = 4x^2 + 12x + 9 - 25y^2\]

B.) In the polynomial \(4x^2 y + x^3 y^2 + 3x^2 y^3 + 7y\), the term \(x^3 y^2\) has degree 6 and no numerical coefficient.

C.) The degree of \(5x^{24} - 3x^{16} y^9 - 7xy^2 + 6\) is 24.
Which one of the following is true?

A.) \[ 2x + 3 - 5y \quad 2x + 3 + 5y = 4x^2 + 12x + 9 - 25y^2 \]

B.) In the polynomial \[ 4x^2y + x^3y^2 + 3x^2y^3 + 7y, \] the term \( x^3y^2 \) has degree 6 and no numerical coefficient.

C.) The degree of \( 5x^{24} - 3x^{16}y^9 - 7xy^2 + 6 \) is 24.

Correct Answer: A
Which one of the following is true?

A.) $x^{10} \div x^2 = x^5$ for all nonzero real numbers $x$.

B.) $\frac{12x^3 - 6x}{2x} = 6x^2 - 6x$

C.) $\frac{x^2 - x}{x} = x - 1$
Which one of the following is true?

A.) \[ x^{10} \div x^2 = x^5 \] for all nonzero real numbers \( x \).

B.) \[ \frac{12x^3 - 6x}{2x} = 6x^2 - 6x \]

C.) \[ \frac{x^2 - x}{x} = x - 1 \]

Correct Answer: C
Which one of the following is true?

A.) If a polynomial in $x$ of degree 6 is divided by a polynomial in $x$ of degree 2, the degree of the quotient is 4.

B.) $\frac{x^2 - x}{x} = x$  

C.) $2^0 = 0$
Which one of the following is true?

A.) If a polynomial in $x$ of degree 6 is divided by a polynomial in $x$ of degree 2, the degree of the quotient is 4.

B.) $\frac{x^2 - x}{x} = x$

C.) $2^0 = 0$

Correct Answer: A
Which one of the following is true?

A.) If $4x^2 + 25x - 3$ is divided by $4x + 1$, the remainder is 9.

B.) If polynomial division results in a remainder of zero, then the product of the divisor and the quotient is the dividend.

C.) The degree of a polynomial is the power of the term that appears in the first position.
Which one of the following is true?

A.) If $4x^2 + 25x - 3$ is divided by $4x + 1$, the remainder is 9.

B.) If polynomial division results in a remainder of zero, then the product of the divisor and the quotient is the dividend.

C.) The degree of a polynomial is the power of the term that appears in the first position.

Correct Answer: B
Which one of the following is true?

A.) $4^{-2} < 4^{-3}$

B.) $5^{-2} > 2^{-5}$

C.) $-2^4 = 2^{-4}$
Which one of the following is true?

A.) $4^{-2} < 4^{-3}$

B.) $5^{-2} > 2^{-5}$

C.) $-2^4 = 2^{-4}$

Correct Answer: B
Which one of the following is true?

A.) \( 4 \times 10^3 + 2 \times 10^2 = 4.2 \times 10^3 \)

B.) \( \frac{8 \times 10^{30}}{4 \times 10^{-5}} = 2 \times 10^{25} \)

C.) \( 534.7 = 5.347 \times 10^3 \)
Which one of the following is true?

A.) $4 \times 10^3 + 2 \times 10^2 = 4.2 \times 10^3$

B.) $\frac{8 \times 10^{30}}{4 \times 10^{-5}} = 2 \times 10^{25}$

C.) $534.7 = 5.347 \times 10^3$

Correct Answer: A