Introduction to Polynomials

M1/13, 1/14 (Unit test 1)

Answer all questions by choosing the letter corresponding to the correct answer.

1. Which of the following expressions is a polynomial?

- A) $\frac{4}{x} + 3$
- B) $5x^2 - 2x + 7$
- C) $3\sqrt{x} + 1$
- D) $x^{-2} + 4x - 5$

2. Which of the following pairs consists of like terms?

- A) $4x^2$ and $4x$
- B) $7xy$ and $-3yx$
- C) $5a^2b$ and $5ab^2$
- D) $9m$ and $9n$

3. Identify the term that is UNLIKE the term $-6x^2y$.

- A) $3x^2y$
- B) $-yx^2$
- C) $8xy^2$
- D) $\frac{1}{2}x^2y$

4. What are the algebraic factors of the term $-12a^2b$?

- A) -12, a, and b
- B) -12, a, a, and b

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- C) $-4, 3, a^2$, and b
- D) $12, a^2$, and b

5. Which of the following is a common factor of both $6x^2y$ and $9xy^2$?

- A) $3x^2y$
- B) $6xy$
- C) $3xy$
- D) $9xy$

6. What is the numerical coefficient of the term $-x^3y^2$?

- A) 0
- B) 1
- C) -1
- D) 3

7. Simplify the expression by combining like terms: $5x + 3y - 2x + 7y$

- A) $3x + 10y$
- B) $7x + 10y$
- C) $3x - 4y$
- D) $13xy$

8. Add the polynomials: $(4x^2 + 3x - 5) + (2x^2 - 7x + 8)$

- A) $6x^2 - 4x + 3$
- B) $6x^2 + 10x + 3$
- C) $6x^4 - 4x^2 + 3$
- D) $2x^2 - 4x - 13$

9. Find the sum of $(7a - 4b + 2c)$ and $(-3a + 4b - 9c)$.

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- A) $4a + 8b - 7c$
- B) $10a - 7c$
- C) $4a - 7c$
- D) $4a + b - 7c$

10. Subtract: $(8m^2 - 5m + 6) - (3m^2 - 2m + 4)$

- A) $5m^2 - 7m + 10$
- B) $5m^2 - 3m + 2$
- C) $5m^2 - 7m + 2$
- D) $11m^2 - 3m + 2$

11. Subtract $(4p^2 - 6p + 1)$ **from** $(9p^2 + 2p - 5)$**.**

- A) $-5p^2 - 8p + 6$
- B) $5p^2 - 4p - 4$
- C) $5p^2 + 8p - 6$
- D) $5p^2 - 8p - 6$

12. Evaluate the polynomial $3x^2 - 4x + 5$ **when** $x = 2$**.**

- A) 9
- B) 13
- C) 25
- D) 15

13. Find the value of the polynomial $2y^2 + 5y - 3$ **when** $y = -3$**.**

- A) 0
- B) -36
- C) 30

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- D) -6

14. Evaluate $4a - 2b + ab$ when $a = 3$ and $b = -2$.

- A) 2
- B) 10
- C) 14
- D) 22

15. The perimeter of a triangle is represented by the polynomial $9x + 4$. If two of its sides have lengths $3x - 1$ and $4x + 2$, what is the length of the third side?

- A) $2x + 3$
- B) $2x + 5$
- C) $7x + 1$
- D) $16x + 5$

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