

HW 4 Polynomial Operations

I will be able to add, subtract, multiply, and divide polynomials.

Name

Per

Part 1: Classify each as **M** (monomial), **B** (binomial), **T** (trinomial), **P** (polynomial), or **C** (constant).

1). _____ $2x + 1$

2). _____ $17x^2 + 11$

3). _____ $8x^3 + 2x^2 + 3x - 7$

4). _____ -130

5). _____ $4a^2 + 7a - 10$

6). _____ $10x^3 - 2x + 1$

Part 2: Standard Form of Polynomials

7.) Circle the problems that are in **standard form**. If it is not in standard form, re-write in standard form.

a. $x^3 - 11x^2$

b. $2 + 3x + 4x^2 + 3x^3$

c. $-3x + 17x^4 + 2x^2$

d. $-1 + 3x + 2x^2$

8. Given: $2x^3 - 5x^2 - 2x + 12$

How many terms are there? _____

What is the coefficient of the 3rd term? _____

What is the constant? _____

Part 3: Add these polynomials. Only combine things that are alike (have the same exponent).

9.) $14x + 5$
 $+10x + 5$

10.) $10x + 12$
 $+ 6x + 20$

11.) $17x^2 + 11$
 $+8x^2 + 11$

12.) $(19x^2 + 12x + 12) + (7x^2 + 10x + 13)$

13.) $(4x^2 - 6x + 7) + (-19x^2 - 15x - 18)$

14.) $(20x^2 + 15x + 13) + (-19x^2 + 17x + 5)$

15.) $(9x^6 - 4x^5) + (10x^5 - 15x^4 + 14)$

16.) $(9x^2 + 12) + (7x^2 + 10x + 13)$

17.) $(5x^6 + 9x^3 - 6x) + (-9x^6 - 20x^2 - 6x)$

Part 4: Subtract these polynomials.

$$\begin{array}{r} 18.) (6x + 14) \\ - (9x + 5) \\ \hline \end{array}$$

$$\begin{array}{r} 19.) (14x^2 + 13x + 12) \\ - (7x^2 + 20x + 4) \\ \hline \end{array}$$

$$\begin{array}{r} 20.) (19x^2 + 9x + 16) \\ - (5x^2 + 12x + 7) \\ \hline \end{array}$$

$$21.) (17x^2 + 7x - 14) - (-6x^2 - 5x - 18)$$

$$22.) (-18x^2 + 4x - 16) - (15x^2 + 4x - 13)$$

Part 5: Multiplying Monomials

$$23.) 2x(4x^2)$$

$$24.) 17x^2(2x^5)$$

$$25.) -3x^3(4x^2)$$

$$26.) -12x^2(-2x)$$

Part 6: Use the distributive property (rainbow) to find the product (multiply).

$$27.) 4(x + 2)$$

$$28.) -3(2x^2 + 1)$$

$$29.) 6(x^2 + 2x + 7)$$

$$30.) 4x(1 - x)$$

$$30.) -x^2(x + 5)$$

$$31.) 3x^2(4x^3 - 5x + 10)$$

$$32.) 3x(-x^2 + 2x - 12)$$

Part 7: Use division and the distributive property to simplify. Divide EVERY term.

$$33.) \frac{-15x + 10}{5}$$

$$34.) \frac{6x^2 + 10}{2}$$

$$35.) \frac{-18x^2 + 21x}{-3}$$

$$36.) \frac{14x^3 + 28x^2 - 70}{7}$$

$$37.) \frac{20x^4 + 15x^2}{5x^2}$$

$$38.) \frac{x^4 + 3x^3 + 7x}{x}$$