

REVIEW: Polynomial Operations

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

KEY
Name _____ Per _____

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

1). B $2x + 1$

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

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

4). C -130

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

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

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

_____ $3x^3 + 4x^2 + 3x + 2$ $17x^4 + 2x^2 - 3x$ $2x^2 + 3x - 1$

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

How many terms are there? 4 What is the coefficient of the 3rd term? -2 What is the constant? 12

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

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

$26x^2 + 22x + 25$

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

$-15x^2 - 21x - 11$

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

$x^2 + 32x + 18$

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

$9x^6 + 6x^5 - 15x^4 + 14$

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

$16x^2 + 10x + 25$

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

$-4x^6 + 9x^3 - 12x$

Part 4: Subtract these polynomials.

18.) $(6x + 14)$
 $- (9x + 5)$

$-3x + 9$

19.) $(14x^2 + 13x + 12)$
 $- (7x^2 + 20x + 4)$

$7x^2 - 7x + 8$

20.) $(19x^2 + 9x + 16)$
 $- (5x^2 + 12x + 7)$

$14x^2 - 3x + 9$

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

$$+ 6x^2 + 5x + 18$$

$$23x^2 + 12x + 4$$

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

$$-33x^2 - 3$$

Part 5: Multiplying Monomials

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

$$8x^3$$

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

$$34x^7$$

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

$$-12x^5$$

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

$$24x^3$$

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

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

$$4x+8$$

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

$$-6x^2-3$$

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

$$6x^2+12x+42$$

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

$$4x-4x^2$$

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

$$-x^3-5x^2$$

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

$$12x^5-15x^3+30x^2$$

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

$$-3x^3+6x^2-36x$$

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

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

$$-3x+2$$

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

$$3x^2+5$$

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

$$6x^2+7x$$

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

$$2x^3+4x^2-10$$

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

$$4x^2+3$$

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

$$x^3+3x^2+7$$