

## REVIEW: 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: Order of Operations and Fractions

7.)  $4 + 2 \times 12 \div 6 - 8 =$

8.)  $9 \div 3 + 6 \times 2 =$

9.)  $3 + 4 - 6 + 2 \times 35 =$

10.)  $\frac{2}{7} + \frac{3}{7} =$

11.)  $\frac{4}{5} + \frac{1}{2} =$

12.)  $\frac{3}{5} - \frac{1}{3} =$

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

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

**Part 4:** Subtract these polynomials.

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

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

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

22.)  $(-18x^2 + 4x - 16) - (15x^2 + 4x - 1)$

**Part 5:** Use the distributive property to find the product (multiply).

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

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

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

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

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

# Polynomials

Classify as a monomial, binomial, or trinomial.

1.  $-9x - 4$        Monomial     Binomial     Trinomial

2.  $-14x^2 - 14x + 19$      Monomial     Binomial     Trinomial

Identify the leading coefficient, leading term, and the degree.

3.  $7x^2 + 17x + 13$

4.  $-x^5 + 23x^3 - x^{15}$

**Add.**

5.  $(14x + 15) + (10x + 14)$

6.  $(8x + 10) + (11x + 10)$

7.  $(14x^2 + 5x + 19) + (11x^2 + 18x + 17)$

**Subtract.**

8.  $(7x + 7) - (11x + 13)$

9.  $(11x + 17) - (14x + 18)$

10.  $(7x^2 + 17x + 13) - (12x^2 + 10x + 4)$

**Multiply.**

|                     |                  |                           |
|---------------------|------------------|---------------------------|
| 11. $(6x)(11x + 9)$ | 12. $5x(4x + 1)$ | 13. $10x(11x^2 + 5x + 4)$ |
|---------------------|------------------|---------------------------|

**Multiply**

|                         |                        |                         |
|-------------------------|------------------------|-------------------------|
| 14. $(11x + 8)(2x + 5)$ | 15. $(7x + 7)(5x + 3)$ | 16. $(5x + 2)(11x + 7)$ |
|-------------------------|------------------------|-------------------------|

**Multiply.**

|                                |                                 |                                           |
|--------------------------------|---------------------------------|-------------------------------------------|
| 17. $(5x^2 + 6x - 10)(8x - 3)$ | 18. $(9x^2 + 11x - 9)(12x - 5)$ | 19. $(-7x^7 - 12x^6 + 9)(6x^2 - 10x - 7)$ |
|--------------------------------|---------------------------------|-------------------------------------------|

**Divide.**

|                      |                           |                           |
|----------------------|---------------------------|---------------------------|
| 20. $\frac{24x}{4x}$ | 21. $\frac{72x^4}{36x^2}$ | 22. $\frac{105x}{126x^2}$ |
|----------------------|---------------------------|---------------------------|

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

|                                                 |                                                |                      |
|-------------------------------------------------|------------------------------------------------|----------------------|
| 23. $\left[\frac{4xy^4}{16x^7z}\right]^2$       | 24. $(3xyz^7)(-5yx^9z^3)$                      | 25. $[(-2xy^2)^3]^2$ |
| 26. $[(11x)(10x + 11)] - (16x + 14) - (10x+16)$ | 27. $[(7x + 4)(-8x - 8)] + [(8x + 9)(5x + 6)]$ |                      |

**Write each number in scientific notation.**

1) 428

2) 0.000051

3) 95.5

4) 0.00268

**Write each number in standard notation.**

5)  $4.7 \times 10^8$

6)  $3.47 \times 10^1$

7)  $2.09 \times 10^{-2}$

8)  $5.8 \times 10^0$

**Simplify. Write each answer in scientific notation.**

9)  $(5.6 \times 10^0)(6.6 \times 10^5)$

10)  $(3 \times 10^{-5})(8 \times 10^{-6})$

11)  $\frac{8.25 \times 10^6}{6.28 \times 10^{-5}}$

12)  $\frac{6.64 \times 10^0}{8.53 \times 10^{-1}}$

13)  $(3.6 \times 10^2)^6$

14)  $(8.01 \times 10^{-6})^5$

Name \_\_\_\_\_

**Algebra Unit 3-6 Review Worksheet A: Operations on Polynomials**  
**ALWAYS LEAVE YOUR ANSWER IN STANDARD FORM!!**

Complete the chart.

|                                        | Simplify the Polynomial <i>(Standard form)</i><br><i>and name it</i> | Degree | Leading Coefficient | Constant |
|----------------------------------------|----------------------------------------------------------------------|--------|---------------------|----------|
| 1. $5c^3 - 7c^2 - 3c^3 + 2c - 2c^3$    |                                                                      |        |                     |          |
| 2. $-4y + 3y^3 + 6y^4 - 3y^3 - 7y + 2$ |                                                                      |        |                     |          |

Add or Subtract then complete the chart.

|                                                     | Simplify the Polynomial <i>(Standard form) &amp; name</i> | Degree | Leading Coefficient | Constant |
|-----------------------------------------------------|-----------------------------------------------------------|--------|---------------------|----------|
| 3. $(7a^4 - 6a^3 + 1) + (3a^3 - 2a + 1)$            |                                                           |        |                     |          |
| 4. $(0.4x^2 - 0.3x + 0.1) + (-0.9x^2 + 0.4x - 0.6)$ |                                                           |        |                     |          |
| 5. $(c^3 + 2c^2 - 5c) - (2c^3 + 4c - 1)$            |                                                           |        |                     |          |

