

Name \_\_\_\_\_

Date \_\_\_\_\_

**Homework #2 Show All Work!**

Period \_\_\_\_\_

For questions #1-6 Write each of the following polynomial expressions in standard form. (Highest degree to lowest degree) Then identify the degree #, the leading coefficient, and the sum of the coefficients.

1)  $7x^2 + 4x^3 + 5 + 2x$

2)  $4 - x - 5x^2$

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

3)  $x^3 + x - 7x^2 + 2$

4)  $2x + 1 - 3x^3 + 5x^2$

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

5)  $4x^3 - 2x^2 + 6 - 8x$

6)  $y^5 + y^{10} - y^2 + y^7$

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

Degree \_\_\_\_\_

Leading Coefficient \_\_\_\_\_

Sum of Coefficients \_\_\_\_\_

**\*\*\*Show All Work**

7) What is the sum of  $-3x^2 - 7x + 9$  and  $-5x^2 + 6x - 4$ .

- (1)  $-8x^2 - x + 5$
- (2)  $-8x^4 - x + 5$
- (3)  $-8x^2 - 13x + 13$
- (4)  $-8x^4 - 13x^2 + 13$

8) The sum of  $3x^2 + 5x - 6$  and  $-x^2 + 3x + 9$  is

- (1)  $2x^2 + 8x - 15$
- (2)  $2x^2 + 8x + 3$
- (3)  $2x^4 + 8x^4 + 3$
- (4)  $4x^2 + 2x - 15$

9) The sum of  $8n^2 - 3n + 10$  and  $-3n^2 - 6n - 7$  is

- (1)  $5n^2 - 9n + 3$
- (2)  $5n^2 - 3n - 17$
- (3)  $-11n^2 - 9n - 17$
- (4)  $-11n^2 - 3n + 3$

10) The sum of  $3x^2 + 4x - 2$  and  $x^2 - 5x + 3$  is

- (1)  $4x^2 + x - 1$
- (2)  $4x^2 - x + 1$
- (3)  $4x^2 + x + 1$
- (4)  $4x^2 - x - 1$

11) What is the sum of  $x^2 - 3x + 7$  and  $3x^2 + 5x - 9$ ?

- (1)  $4x^2 - 8x + 2$
- (2)  $4x^2 + 2x + 16$
- (3)  $4x^2 - 2x - 2$
- (4)  $4x^2 + 2x - 2$

12) If  $A = -4x^2 + 5x - 9$  and  $B = -2x^2 + x + 6$ , then what is  $A + B$ ?