

Name: Key

Date: \_\_\_\_\_ Hour: \_\_\_\_\_

Identify the degree of each monomial.

1)  $6x^2$

2

2)  $3p^3m^4$

7

3)  $2x^8y^3$

11

Rewrite each polynomial in standard form. Then identify the leading coefficient, degree, and number of terms. Name the polynomial.

4)  $6 + 7x - 4x^3 + x^2$

Standard Form:  $-4x^3 + x^2 + 7x + 6$

Leading Coefficient: -4

Degree: 3

Number of Terms: 4

Name: Cubic polynomial

5)  $x^2 - 3 + 2x^5 + 7x^4 - 12x$

Standard Form:  $2x^5 + 7x^4 + x^2 - 12x - 3$

Leading Coefficient: 2

Degree: 5

Number of Terms: 5

Name: 5th degree polynomial

Add or subtract. Write your answer in standard form.

6)  $(2x^2 - 2x + 6) + (11x^3 - x^2 - 2 + 5x)$

Answer:  $11x^3 + x^2 + 3x + 4$

7)  $(x^2 - 8) + (3x^3 + 6x + 4 + 9x^2)$

~~$(x^2 - 8) + (-3x^3 + 6x + 4 - 9x^2)$~~

Answer:  $-3x^3 - 8x^2 + 6x - 4$

8)  $(5x^4 + x^2) + (7 + 9x^2 - 2x^4 + x^3)$

Answer:  $3x^4 + x^3 + 10x^2 + 7$

9)  $(12x^2 + x) - (6 - 9x^2 + x^7 - 8x)$

~~$(12x^2 + x) + (-6 + 9x^2 - x^7 + 8x)$~~

Answer:  $-x^7 + 21x^2 + 9x - 6$

Graph each polynomial function on a calculator. Describe the graph, and identify the number of real zeros.

10)  $f(x) = x^3 + 2x^2 - 3$

11)  $f(x) = x^4 - 5x^2 + 1$

Description: cubic shape

Description: "W" shape

Number of Real Zeros: 1

Number of Real Zeros: 4

12) Kyle Schwarber gets a hit every time he is up to bat in the world series. The height of his hits,  $h$ , can be approximated by  $h(t) = -16t^2 + 100t + 5$ , where  $t$  is measure in seconds.

a) Evaluate  $h(t)$  for  $t = 3$  and  $t = 5$

$h(3) = 161$      $h(5) = 105$

b) Describe what the values of the function from part a represent.

The ball will be 161 ft in the air after 3 seconds  
The ball will be 105 ft in the air after 5 seconds