

Study Guide for Quiz on Polynomial Functions

Learning Target 1: Classifying and describing polynomial functions from their end behavior.

Directions: For each of the equations, write them in standard form, classify the degree of polynomial, and describe its end behavior (3 points each)

1.) $f(x) = 10x + x^5 - 5x^2$

2.) $f(x) = 3x^2 + 9x^4 - 2x^3 + 10$

Standard Form: _____ Standard Form: _____

Classification: _____ Classification: _____

End Behavior: _____ End Behavior: _____

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

4.) $f(x) = (x + 10)(x - 6)$

Standard Form: _____ Standard Form: _____

Classification: _____ Classification: _____

End Behavior: _____ End Behavior: _____

Learning Target 2: Solve Polynomials by graphing

Directions: Solve each of the polynomials using graphing. (3points each)

5.) $y = x^3 + 2x^2 - 8x$

6.) $y = x^4 + 10x^2 - 25$

7.) $y = x^5 + 10x^4 - 15x^3 - 5x$

8.) $y = 3x^2 + 10x^2 - 18$

9.) $y = 2x^3 + 6x^2 - 4$

10.) $y = 2x^6 + 6x^4 - 4x^2$

Learning Target 3: Solve Polynomials by Factoring**Directions:** Find all the solutions of each equation by factoring (4 points each)

11.) $2x^3 + 10x^2 + 8x = 0$

12.) $4x^3 - 12x^2 = 16x$

13.) $9x^3 - 18x^2 = 27x$

14.) $4x^3 + 12x^2 + 3x + 9 = 0$

15.) $5x^3 - 15x^2 + 4x - 12 = 0$

16.) $7x^3 - 21x^2 = 5x - 15$