SM 3H DATE: SECTION:

OBJECTIVE:

Degree of a polynomial:

Fundamental Theorem of Algebra:

EXAMPLE

Without graphing, determine the number of zeros for each of the following polynomials.

$$7x^3 + 9x^5 - 14x^7 + 2x - 3x^2 + 1$$

Standard Form of a Polynomial:

Write the polynomial from the example above in standard form.

Remainder Theorem:

For the given polynomials determine which of the binomials listed are factors. Use the remainder theorem. Show work!

1. $f(x) = x^3 + 3x^2 - 4x - 12$
   a. $x + 2$
   b. $x - 2$
   c. $x + 1$

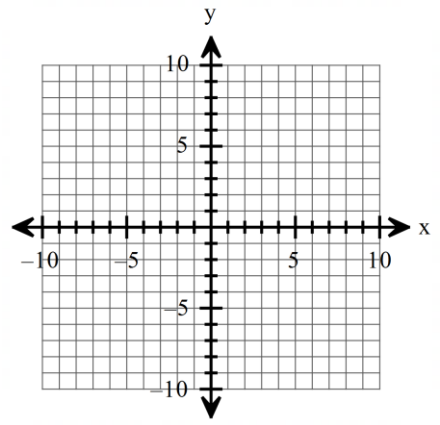
For the given polynomials determine which of the given values are solutions. Use the remainder theorem. Show work!

1. $f(x) = 2x^3 + 4x^2 + 5x - 8$
   a. $x = 2$
   b. $x = -2$
   c. $x = 1$

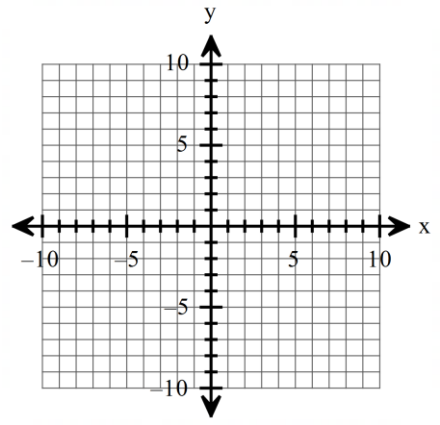
End Behavior:

Limit Notation:

General example for any even degree polynomial



General example for any odd degree polynomial



EXAMPLES

Without graphing, state the degree of the polynomial and determine whether it is even or odd, then write the end behavior as a limit.

1. $f(x) = x^3 - 4x^2 + x - 7$

2. $f(x) = -3x^4 + 7x^3 - 4x^2 + x - 1$

*** even goes to _____ but bad goes to _____
Odd are at _____ but bad odd is at _____ twice