



**Problem 1 – Finding Zeros Graphically**

Read the notes on page 1.2 and then follow the directions on page 1.3 to complete the activity.

Function	Degree	Zeros
$f(x) = x^3 - 3x^2 - x + 3$		
$f(x) = x^3 - 3x - 2$		
$f(x) = x^4 + 5x^3 + 3x^2 - 5x - 4$		
$f(x) = x^4 - x^3 - 7x^2 + x + 6$		
$f(x) = x^4 - 3x^3 - 6x^2 + 28x - 24$		
$f(x) = x^5 + 2.6x^4 - 1.11x^3 - 3.74x^2 - 0.73x + 0.3$		

1. Make a conjecture about the number of real zeros of a polynomial in relation to the degree of the polynomial.

2. A fourth degree polynomial has four zeros:

*Always*

*Sometimes*

*Never*

3. A polynomial can have more zeros than the highest degree of the function.

*True*

*False*

4. What is the greatest number of zeros possible for the function  $f(x) = x^5 - 15x^3 + 10x^2 + 60x - 72$ ?