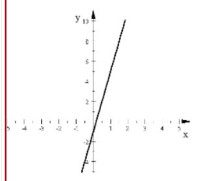
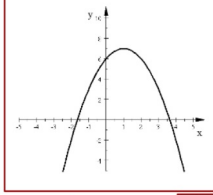
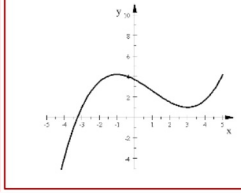
Linear



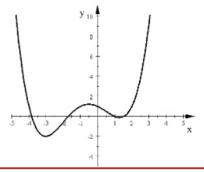
Quadratic



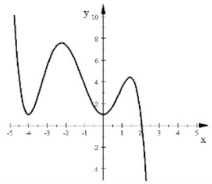
Cubic



4^{th} degree



5^{th} degree



Polynomials are continuous graphs....they have no breaks in the graph

Domain and Range of Polynomials:

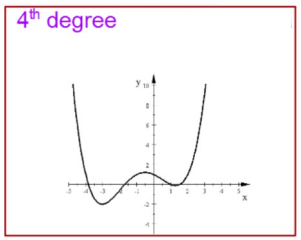
Domain: All polynomial functions have a domain of ALL REAL NUMBERS

Range: ODD: ALL REAL NUMBERS

EVEN: All even polynomials have either an Absolute Max or an Absolute Min and then extend forever in the other direction.

Even Function:

4^{th} degree

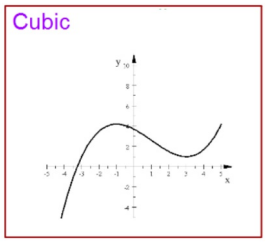


Domain: All Real Numbers

Range: $y \geq -2$

Odd Function:

Cubic



Domain: All Real Numbers

Range: All Real Numbers

X - Intercepts -- Can have up to n x-intercepts.
n = degree of polynomial

EVEN Functions may have no x-intecept or multiple x-intercepts.
ODD Functions must have at least 1 x-intercept

Y - intercepts -- All polynomials have exactly ONE y-intercept.

Given these zeros of a polynomial, write the polynomial in Stanard Form.

1. Zeros: 4, -1, 2

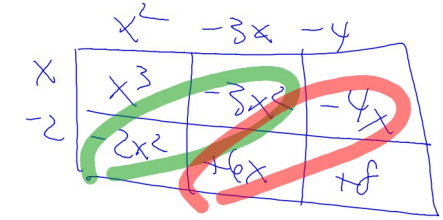
2. Zeros: 3, -3, 1

3. Zeros: 5(double zero), 0

1. Zeros: 4, -1, 2

$(x-4)(x+1)(x-2) =$

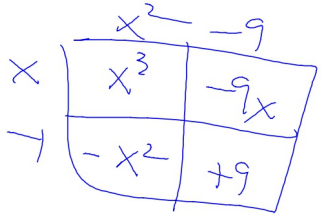
$(x^2-3x-4)(x-2) =$



$= x^3-5x^2+2x+8$

2. Zeros: 3, -3, 1

$(x^2-9)(x-1) = x^3 - x^2 - 9x + 9$



3. Zeros: 5(double zero), 0

$x(x-5)^2 = x(x^2-10x+25)$

$= x^3-10x^2+25x$

Write each polynomial in factored form:

1. $2x^3 - 98x$

$2x(x^2-49)$

$2x(x-7)(x+7)$

2. $24x^3 + 28x^2 - 12x$

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

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

	$2x$	$+3$
$3x$	$6x^2$	$9x$
-1	$-2x$	-3

-18, 9, -2, $+7$

Hwk #26:

Page 317

Problems 3, 4, 7, 8, 21, 22, 25