How could you solve this equation by graphing?

$x^2 - 2x + 1 = x^3 - 2x^2 + 3$

remember, solutions are the same as x-intercepts or zeros

$x^2 - 2x + 1 = x^3 - 2x^2 + 3$

$-x^3 + 3x^2 - 2x - 2 = 0$

$x = -0.52$

Move all terms to one side and find the zero(s) (x-intercepts) of the graph

$x^2 - 2x + 1 = x^3 - 2x^2 + 3$

$Y_1 \qquad Y_2$

$x = -0.52$

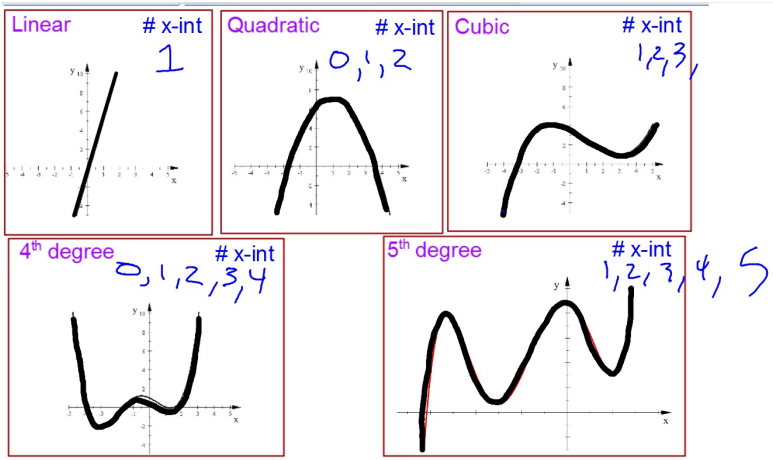
graph the two sides as separate equations and find their point(s) of intersection.

You can now finish Hwk #29: Sec 6-4

Pages 330-331

Problems: 1, 23, 24, 29, 30, 33, 35

Due Tomorrow



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.

If a graph had more than one y-intercept it wouldn't be a function!

How does the following factor?

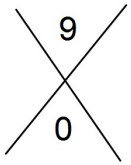
$4x^2 - 25 = (2x + 5)(2x - 5)$

difference of perfect squares always factors:

$a^2 - b^2 = (a + b)(a - b)$

Is there a way to factor the sum of perfect squares?

$x^2 + 9$



If two numbers multiply to a positive they would have the same sign,
and two numbers with the same sign don't add to zero!

what are these numbers?

1, 8, 27, 64, 125, ...

Perfect Cubes

Factoring the difference of perfect cubes:

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

Factor the following:

1. $x^3 - 64$ = $(x-4)(x^2+4x+16)$

$a = x$

$b = 4$