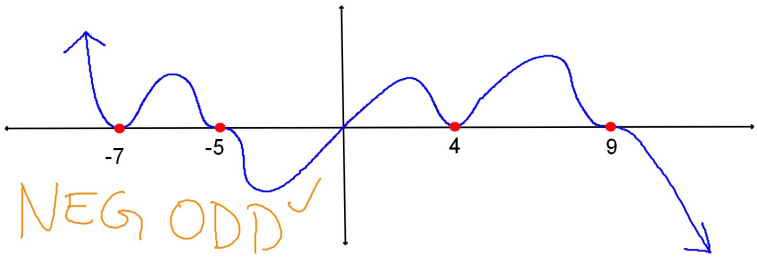
Alg 2 Bellwork Wednesday, December 4, 2013

1. Write a possible equation for this graph.

y = $-x(x+7)^2(x+5)^3(x-4)^2(x-9)^3$



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2. Sketch the graph of this polynomial. y = $(x-3)^2(2-x)^3(x+6)(x+1)^2$

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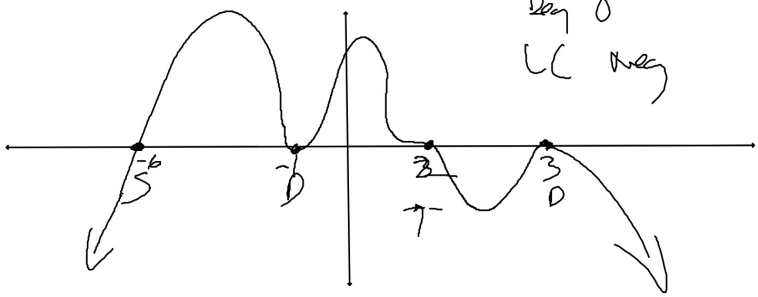
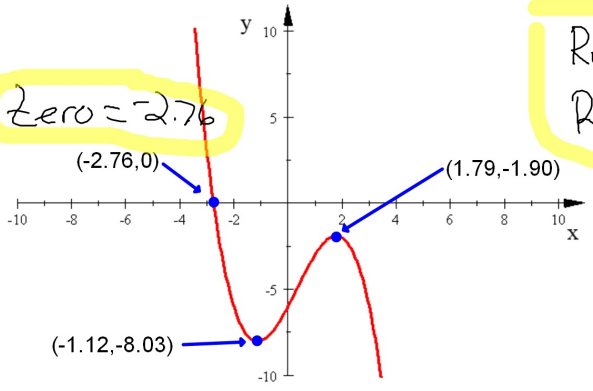


3. Find all Absolute Max and Min (if any), Relative Max and Min (if any), and real zeros of this polynomial.

$y = -0.5x^3 + 0.5x^2 + 3x - 6$



Zero = -2.76

Rel max = -1.90

Rel min = -8.03

4. Is each of the below a polynomial?

a. $y = -\frac{2}{3}x^2 - 1.73x + 4$

Yes

b. $y = \frac{5}{x^4} + 4x^3 + 10x^2$

$5x^{-4}$

No

c. $y = 12x^2 - 6\sqrt{x} + 8$

No

$x^{\frac{1}{2}}$

5. 5 is a solution to this equation. Find the other three solutions.

$3x^4 - 17x^3 + 22x^2 - 68x + 40 = 0$

$x - 5$

5	3	-17	22	-68	40
		15	-10	60	-40
	3	-2	12	-8	0

$3x^3 - 2x^2 + 12x - 8$

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

$x^2 + 4 = 0$

$-4 \quad -4$

$\sqrt{x^2} = \sqrt{-4}$

$\pm 2i$

$\frac{2}{3}$

	x^2	4
$3x$	$3x^3$	$12x$
-2	$-2x^2$	-8

6.

Sum and Difference of Cubes

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

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

Quadratic Formula

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Find ALL solutions to this polynomial equation.

$125w^3 + 8 = 0$

$(5w)^3 + 2 = (5w+2)(25w^2 - 10w + 4)$

$(5w)^2$

$5w + 2 = 0$

$-2 \quad -2$

$\frac{5w}{5} = \frac{-2}{5}$

$w = \frac{-2}{5}$

$\frac{10 \pm \sqrt{100 - 4 \cdot 100}}{50}$

$\frac{10 \pm \sqrt{-300}}{50}$

$100 \cdot 3$

$10 \cdot 10$

$\frac{10 \pm 10i\sqrt{3}}{50}$

$\frac{1 \pm i\sqrt{3}}{5}$