

Bellwork Alg 2A Monday, May 8, 2017

1. Graph this polynomial and state the coordinates of all Absolute and Relative Extrema, if any. Also state all the zeros, if any. Round to the nearest hundredth.

$$y = -0.1x^4 - x^3 - 2x^2 + 4x + 6$$

Abs Max:

Abs Min:

Rel Max:

Rel Min:

Zeros:

2. Find all Complex roots, real and imaginary, using factoring. Leave answers in simplified radical form where necessary.

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

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

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

a) $y = 8x^4 - 4x^3 + 72x^2 - 36x$

b) $y = 6x^7 - 30x^5 + 24x^3$

c) $y = 216x^3 - 125$

d) $y = x^4 - 256$

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ALG 2A BELLWORK ANSWERS

Mon 5-8-17

① $y = -.1x^4 - x^3 - 2x^2 + 4x + 6$

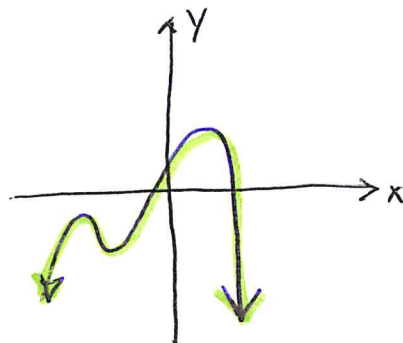
ABS MAX: (0.65, 7.46)

ABS MIN: NONE

Rel Max: (-5.21, -1.39)

Rel min: (-2.94, -5.11)

Zeros: -1.17, 1.67



2a) $8x^4 - 4x^3 + 72x^2 - 36x$
 $= 4x(2x^3 - x^2 + 18x - 9)$

	$2x$	-1
x^2	$2x^3$	$-x^2$
$+9$	$+18x$	-9

$= 4x(2x-1)(x^2+9)$

ROOTS ARE:
 $0, \frac{1}{2}, \pm 3i$

2b) $6x^7 - 30x^5 + 24x^3$
 $= 6x^3(x^4 - 5x^2 + 4)$

$\begin{array}{c} 4 \\ -1 \times -4 \\ -5 \end{array} = 6x^3(x^2-1)(x^2-4)$

Zeros are:
 $0, \pm 1, \pm 2$

2c) $216x^3 - 125$

$(6x)^3 - (5)^3 = (6x-5)(36x^2 + 30x + 25)$

$a = 6x$
 $b = 5$

$\frac{-30 \pm \sqrt{-2700}}{72} = \frac{-30 \pm 30\sqrt{3}i}{72}$

Roots are:

$5/6, \frac{-5 \pm 5\sqrt{3}i}{12}$

2d) $x^4 - 256$

$= (x^2 + 16)(x^2 - 16)$

$= (x^2 + 16)(x \pm 4)$

ROOTS ARE:

$\pm 4, \pm 4i$