POLYNOMIAL FUNCTIONS

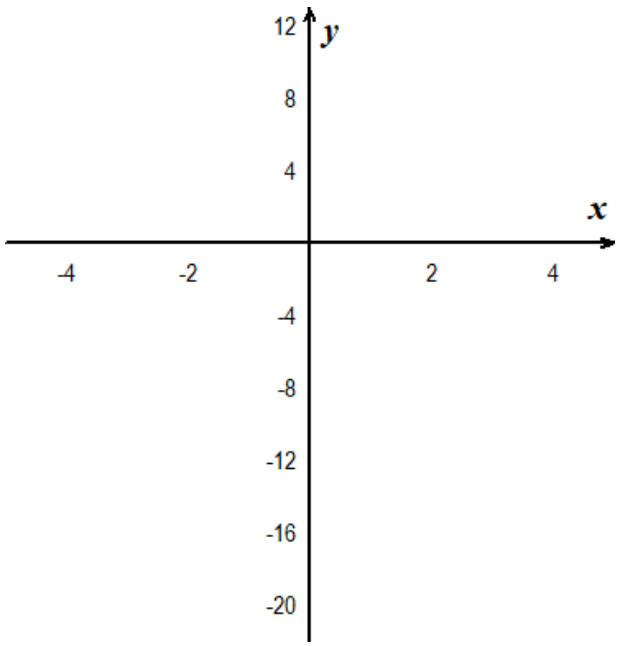
G.N.A.W. [Rule of Four]

Name _____

Date _____ Period _____

Graphically

Sketch the polynomial function on the axes below. Label intercepts, relative maximum and minimum points.



Numerically

Use synthetic division to find rational zeros of the equation: $x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$

Algebraically

Write $g(x)$ as a product of factors. Use synthetic division results to help.

$$g(x) = x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$$

Verbally

Use the Rational Root Theorem to make an organized list of potential rational zeros.

Given: $g(x) = x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$

Number of Zeros: _____

Leading Coefficient: _____

Constant term: _____

POSSIBLE RATIONAL ZEROS:

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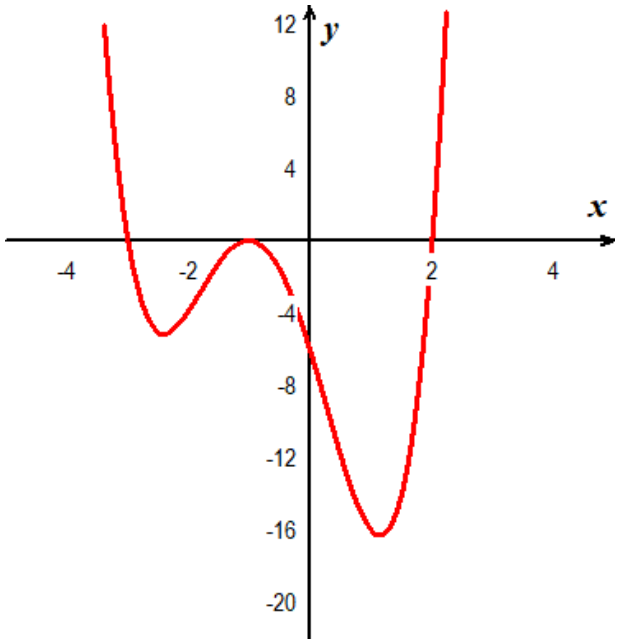

Numerically

Use synthetic division to find rational zeros of the equation: $x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$

Zeros of the polynomial:
X= -1, multiplicity 2,
x= 2 and
x= -3

Algebraically

Write $g(x)$ as a product of factors. Use synthetic division results to help.

$$g(x) = x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$$

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

$g(x) = (x+1)(x+1)(x-2)(x+3)$

Verbally

Use the Rational Root Theorem to make an organized list of potential rational zeros.

Given: $g(x) = x^4 + 3x^3 - 3x^2 - 11x - 6 = 0$

Number of Zeros: 4

Leading Coefficient: 1

Constant term: -6

POSSIBLE RATIONAL ZEROS:

±1, ±2, ±3, ±6