

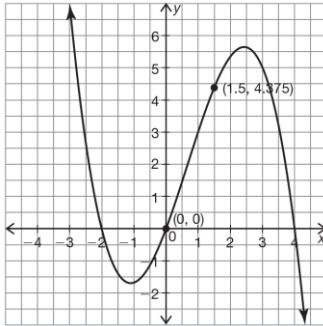
Name: \_\_\_\_\_ Period: \_\_\_\_ Due Date: February 12, 2019

(MATH 5)

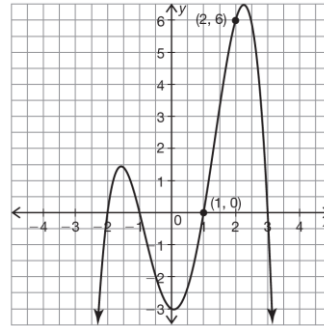
### Polynomial Homework #5

Directions: Find the average rate of change over each interval.

1.  $(-2, 1)$



2.  $(-1, 2)$



Directions: Use the indicated method to determine whether the factor is a factor of the polynomial.

1. Synthetic Division

Factor:  $3x+2$

Polynomial:  $3x^5+20x^4+9x^3-92x^2-60x$

2. Remainder/Factor Theorem

Factor:  $x-3$

Polynomial:  $x^3+12x^2+17x-30$

Directions: Use division to write the dividend as the product of the divisor and the quotient.

1. Long Division:  $(2x^3+7x^2-10x-24) \div (x+4)$

2. Synthetic Division:  $(2x^3-x^2-13x-6) \div (x-2)$

Directions: Factor each of the following polynomials COMPLETELY.

1.  $x^2+7x+6$

3.  $x^3-7x^2-4x+28$

2.  $25x^4+35x^2+6$

4.  $8x^3-27$

Directions: Determine all of the possible rational roots of each polynomial.

1.  $2x^4-4x^2+15=0$

2.  $x^3+3x^2-18x-40=0$

Directions: Solve the polynomial completely.

1.  $x^3+3x^2-18x-40=0$