

Name: \_\_\_\_\_ Hour: \_\_\_\_\_ Date: \_\_\_\_\_

## NOTES: Section 5.6 – Find Rational Zeros

Goals: #1 - I can find the possible rational zeros of a polynomial.



#2 - I can find all the real zeros of a polynomial.

*Homework: Lesson 5.6 Worksheet*

### Warm Up:

1. Divide:  $(6x^4 - x^3 - x^2 + 11x - 18) \div (2x^2 + x - 3)$

2. One zero of  $f(x) = x^3 - x^2 - 17x - 15$  is  $x = -1$ . What are the other two zeros of the function?

### Notes:

- \_\_\_\_\_:

If a \_\_\_\_\_  $f(x)$  has \_\_\_\_\_ coefficients, then every

\_\_\_\_\_ of  $f$  has the following form:

$$\text{---} = \text{-----}$$

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**Example #1:** List the possible rational zeros of  $f$  using the rational zero theorem.

1.  $f(x) = x^3 + 2x^2 - 11x + 12$

2.  $f(x) = 4x^4 - x^3 - 3x^2 + 9x - 10$

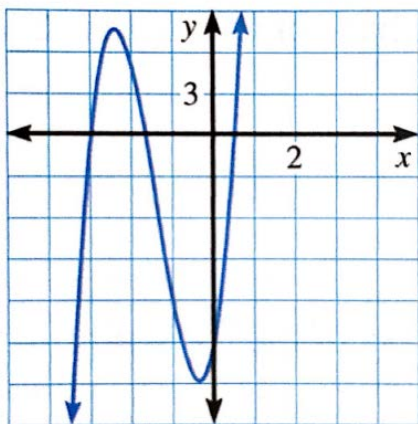
**Example #2:** Find all real zeros of  $f(x) = x^3 - 8x^2 + 11x + 20$

**You practice:** Find all real zeros of  $f(x) = x^3 - 4x^2 - 15x + 18$

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**Example #3:** Use the graph to help find all real zeros of the function.

1.  $f(x) = 6x^3 + 25x^2 + 16x - 15$



**Example #2:** Find all real zeros of  $f(x) = 3x^4 - 6x^3 - 32x^2 + 35x - 12$

**You practice:** Find all real zeros of  $f(x) = 2x^3 + 5x^2 - 11x - 14$