



DATE:

SECTION:

OBJECTIVE:

**Rational Zero Theorem:**

**Steps:**

**EXAMPLE:**

**Use the Rational Zeros Theorem to write a list of all potential rational zeros.**

1.  $f(x) = x^2 + 7x + 12$

2.  $f(x) = 3x^4 - 8x^3 - 37x^2 + 2x + 40$

**Use the Rational Zeros Theorem to write a list of all potential rational zeros. Then determine which ones, if any, are zeros. Show your work on a separate piece of paper.**

1.  $f(x) = x^2 + 7x + 12$

2.  $f(x) = 3x^4 - 8x^3 - 37x^2 + 2x + 40$

**Upper Bounds:**

**Lower Bounds:**

**Steps:**

**EXAMPLE:**

**Prove the real zeros lie in the interval  $[-2, 5]$ .**

1.  $f(x) = 2x^4 - 7x^3 - 8x^2 + 14x + 8$

\*\*\*\*\*Complex zeros ALWAYS come in \_\_\_\_\_ called conjugates!

If you have  $x = 3 + i$ , then you must have \_\_\_\_\_.

**EXAMPLE** using everything from this lesson to make finding the zeros easier and less work.

**Find all of the real zeros of the function, finding exact values whenever possible. Identify each zero as rational or irrational.**

1.  $f(x) = 2x^3 - 3x^2 - 4x + 6$