**Steps to Finding ALL Zeros:**

**1.)** List the possible \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of solutions.

**2.)** List the possible \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ roots.

**3.)** Test the possible rational, real roots. Remember you’re looking for numbers that result in a \_\_\_\_\_\_\_\_\_\_ of 0! You need to find as many zeros that work to take your degree down to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ so that you can solve by factoring or the quadratic formula.

**4.)** Solve the remaining quadratic function by (1) \_\_\_\_\_\_\_\_\_\_\_\_\_ or (2) the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. \*You may use the square root method when you have only a squared term & constant.

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| Example: Solve by finding ALL roots | |
| Step 1: | Step 2: |
| Step 3: | Step 4: |
| Answer: | |

We've seen previously as we've solved equations that there are a variety of answers/roots/solutions/zeros when solving a   
polynomial function.

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ states that if a polynomial has an imaginary root/zero of ai then it also has the root/zero of \_\_\_\_. The same goes when a polynomial has a root/zero of a + bi. The polynomial will also have a root/zero of \_\_\_\_\_\_\_\_\_\_\_\_\_.

So we must remember that\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ roots/zeros **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** come in pairs.

**Example:** Determine the possible solution types for a polynomial with a degree of 5.

**Example:** Determine the possible solution types for a polynomial with a degree of 6.