Write a polynomial of least degree that has rational coefficients, a leading coefficient of 1, and zeros of 0 and 2, where 2 is a double zero.

Step 1: Set each root equal to x.

Step 2: Set each equation equal to 0. These are your factors.

Step 3: Multiply the factors and expand.

Step 4: Write the polynomial in standard form.

Write a polynomial of least degree that has rational coefficients, a leading coefficient of 1, and zeros of -2 and i.

Step 1: Set each root equal to x.

Remember...
Imaginary zeros
come in conjugate
pairs!

Step 2: Set each equation equal to 0. These are your factors.

Step 3: Multiply the factors and expand.

Step 4: Write the polynomial in standard form.

Write a polynomial of least degree that has rational coefficients, a leading coefficient of 1, and zeroes of -5 and $\sqrt{3}$.

Step 1: Set each root equal to x.

Step 2: Set each equation equal to 0. These are your factors.

Step 3: Multiply the factors and expand.

Step 4: Write the polynomial in standard form.

Given the roots, write the polynomial in standard form.

1. -3, 4   2. -3, 0, 1

3. -2 with a multiplicity of 3   4. -1/2, 0, 3

5. -3/4, 2/3   6. 4, 2i

7. $-\sqrt{3}$, 2