Review Day Warm-up

1) I am thinking of three consecutive integers. The product of the 2nd and 3rd integers is 56.

\[ (x+1)(x+2) = 56 \]
\[ x^2 + 3x + 2 = 56 \]
\[ x^2 + 3x - 54 = 0 \]
\[ x = \frac{-3 \pm \sqrt{9 + 216}}{2} \]
\[ x = \frac{-3 \pm 15}{2} \]
\[ x = 6, -9 \]

(-9, -8, -7) and (6, 7, 8)

2) Use your calculator to find ONE root. You must show your work and find the other two roots.

\[ x^3 + 2x^2 - 14x - 40 = 0 \]

\[ x = 4 \]
\[ x = -3 \pm i \]

3) Find the standard form equation for a polynomial whose roots are 2, -5i, and 3 + 5i.

\[ (x-2)(x+5i)(x-3-5i) \]
\[ x^3 - 4x^2 + 29x - 87 \]
\[ x^3 - x^2 + 17x - 87 \]