

RRT + Applications of Polynomials Hw key

1. Possible ^{Rational} Roots: $\pm 1, \pm 3, \pm 11, \pm 33$
Actual Roots: $-3, -4 \pm \sqrt{5}$

2. Possible ^{Rational} Roots: $\pm 1, \pm 2, \pm 3, \pm 6$
Actual Roots: $2, 3 \pm 2\sqrt{3}$

3. Possible ^{Rational} Roots: $\pm 1, \pm 3, \pm 9, \pm 27, \pm 1/2, \pm 3/2, \pm 9/2, \pm 27/2$
Actual Roots: $3, \frac{1 \pm i\sqrt{7}}{2}$

* Hint for #1-3: If you do synthetic division and can get the polynomial down to a quadratic, try factoring or quadratic formula to find the rest of the actual roots!

4. $5\text{cm} \times 18\text{cm}$

5. $9\text{m} \times 5\text{m}$