Name

11-5A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 792–795 for objectives.

PROPERTIES Objective G

1. Determine whether each number could be a root of a polynomial $p(x)$ with first term $3x^5$ and constant term 8 according to the Rational-Root Theorem.

   a. 1 _____ b. $-\frac{1}{3}$ _____ c. 3 _____ d. –8 _____

2. Determine whether $\frac{3}{5}$ could be a root of each polynomial according to the Rational-Root Theorem.

   a. $12x^2 - 14x + 10$ _____ b. $10x^2 - 14x + 12$ _____

In 3 and 4, a. use the Rational-Root Theorem to list all possible rational roots of the polynomial, and b. find all rational roots.

3. $2x^3 + 5x^2 - 2x - 15$ a. _____ b. _____

4. $3x^4 - 10x^3 - 9x^2 + 40x - 12$ a. _____ b. _____

REPRESENTATIONS Objectives J, K

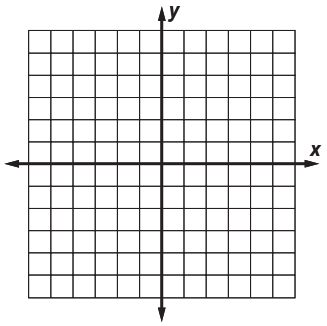
5. Consider the polynomial $p(x) = -3x^3 + 5x^2 - 3x + 5$.

   a. List the possible rational roots according to the Rational-Root Theorem. _____

   b. Sketch a graph of p for $-3 \le x \le 3$ at the right.

   c. According to the graph, which of the possible rational roots could be an actual root? _____

   d. Determine whether it is actually a root. _____



6. Consider the polynomial $f(x) = 3x^3 + x^2 + x - 2$.

   a. List the possible rational roots according to the Rational-Root Theorem. _____

   b. **Multiple Choice** Based on your answer to Part a, which would be a good domain over which to graph f? _____

   A $-20 \le x \le 20$ B $-10 \le x \le 10$ C $-4 \le x \le 4$

   c. At the right, sketch a graph of f over the domain you chose in Part b.

   d. Determine all rational roots of f. _____