

NAME: \_\_\_\_\_ Score \_\_\_\_\_/10

**Perform the following two divisions. Then answer Question 3.**

$$1. \frac{(x^2 + 5)(x - 3)(x + 4)}{(x^2 + 5)(x + 4)} = \frac{\cancel{(x^2 + 5)}(x - 3)\cancel{(x + 4)}}{\cancel{(x^2 + 5)}\cancel{(x + 4)}} = x - 3$$

$$2. \begin{array}{r} x^2 + x - 2 \overline{) 3x^3 + 4x^2 - 5x + 2} \\ \underline{3x^3 + 3x^2 - 6x} \phantom{+ 2} \\ x^2 + x + 2 \\ \underline{x^2 + x - 2} \\ 4 \end{array}$$

3. Write your results from Problem 2 in the form  $p = qd + r$ 

$$3x^3 + 4x^2 - 5x + 2 = (x^2 + x - 2)(3x + 1) + 4$$