Name: _____ Date: _____

3-4 POLYNOMIAL LONG DIVISION

FLUENCY

1. Write each of the following rational expressions in the form $a+\frac{r}{x-b}$. Do these by rewriting your numerator as was done in Exercises #4 and #5.

   (a) $\frac{x+6}{x+2}$ (b) $\frac{x-10}{x-3}$

   (c) $\frac{2x+5}{x+2}$ (d) $\frac{5x-2}{x-4}$

2. If the expression $\frac{10x+11}{2x+1}$ was placed in the form $5+\frac{a}{2x+1}$, then which of the following would be the value of *a*?

   (1) 6 (3) 3

   (2) -7 (4) -5

   _____

3. Use polynomial long division to simplify each of the following ratios. There should be a zero remainder.

   (a) $\frac{x^2+5x-24}{x-3}$ (b) $\frac{6x^2+11x-10}{3x-2}$

4. Use polynomial long division to write each of the following ratios in $q(x)+\frac{r}{x-a}$ form, where $q(x)$ is a polynomial and *r* is the remainder.

(a) $\frac{x^2-6x+11}{x-4}$

(b) $\frac{x^2+2x-25}{x+7}$

(c) $\frac{3x^2+17x+25}{x+4}$

(d) $\frac{5x^2-41x+3}{x-8}$

5. Write each of the following in $q(x)+\frac{r}{x-a}$. The polynomial $q(x)$ will now be a quadratic.

(a) $\frac{x^3+7x^2+17x+41}{x+5}$

(b) $\frac{2x^3-11x^2+22x-25}{x-3}$