

PRE-AP ALGEBRA 2

For problems 1 and 2, perform the indicated division to calculate $y = f(x)$. Use both

- long division, and
- synthetic division.

1)

$$f(x) = \frac{10x^3 + 59x^2 - 9x - 11}{x + 6}$$

(a)

$$\begin{array}{r} 10x^2 - x - 3 \\ x+6 \overline{) 10x^3 + 59x^2 - 9x - 11} \\ \underline{-10x^3 - 60x^2} \\ -x^2 - 9x - 11 \\ \underline{x^2 + 6x} \\ -3x - 11 \\ \underline{3x + 18} \\ 7 \end{array}$$

$$f(x) = 10x^2 - x - 3 + \frac{7}{x+6}$$

(b)

$$\begin{array}{r|rrrr} -6 & 10 & 59 & -9 & -11 \\ & & -60 & 6 & 18 \\ \hline & 10 & -1 & -3 & 7 \end{array}$$

$$f(x) = 10x^2 - x - 3 + \frac{7}{x+6}$$

3B.4 CLASSWORK

2)

$$f(x) = \frac{28x^3 - 127x^2 - 71x + 30}{x - 5}$$

(a)

$$\begin{array}{r} 28x^2 + 13x - 6 \\ x-5 \overline{) 28x^3 - 127x^2 - 71x + 30} \\ \underline{-28x^3 + 140x^2} \\ 13x^2 - 71x + 30 \\ \underline{-13x^2 + 65x} \\ -6x + 30 \\ \underline{6x - 30} \\ 0 \end{array}$$

$$f(x) = 28x^2 + 13x - 6$$

(b)

$$\begin{array}{r|rrrr} 5 & 28 & -127 & -71 & 30 \\ & & 140 & 65 & -30 \\ \hline & 28 & 13 & -6 & 0 \end{array}$$

$$f(x) = 28x^2 + 13x - 6$$