Week 8 - What's More

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Activity 1

1.

$$\begin{array}{r}
2x^2 + x - 1 \\
x + 4{\overline{\smash{\big)}\,2x^3 + 9x^2 + 3x - 4}} \\
\underline{-\,2x^3 - 8x^2} \\
x^2 + 3x \\
\underline{-\,x^2 - 4x} \\
-\,x - 4 \\
\underline{x + 4} \\
0
\end{array} \tag{1}$$

2.

$$\begin{array}{r}
4x^2 - 6x + 9 \\
2x + 3{\overline{\smash{\big)}\,8x^3 + 27}} \\
\underline{-\,8x^3 - 12x^2} \\
-\,12x^2 \\
\underline{12x^2 + 18x} \\
18x + 27 \\
\underline{-\,18x - 27} \\
0
\end{array} \tag{2}$$

3.

$$\begin{array}{r}
12x^2 + 4x + 19 \\
x - 2{\overline{\smash{\big)}\,12x^3 - 20x^2 + 11x - 14}} \\
\underline{-\,12x^3 + 24x^2} \\
4x^2 + 11x \\
\underline{-\,4x^2 + 8x} \\
19x - 14 \\
\underline{-\,19x + 38} \\
24
\end{array} \tag{3}$$

Activity 2

a)

$$
\begin{array}{r|rrr}
 & 4 & 1 & -3 \\
3 & & 12 & 39 \\
\hline
 & 4 & 13 & 36 \\
\end{array}
\tag{4}
$$

$$4x + 13 \quad r36$$

b)

$$
\begin{array}{r|rrrrr}
 & -1 & -2 & 3 & 0 & -4 \\
-2 & & 2 & 0 & -6 & 12 \\
\hline
 & -1 & 0 & 3 & -6 & 8 \\
\end{array}
\tag{5}
$$

$$-x^3 + 3x - 6 \quad r8$$

c)

$$
\begin{array}{r|rrrrrr}
 & 2 & 0 & -2 & 4 & 0 & -3 \\
-1 & & -2 & 2 & 0 & -4 & 4 \\
\hline
 & 2 & -2 & 0 & 4 & -4 & 1 \\
\end{array}
\tag{6}
$$

$$2x^4 - 2x^3 + 4x - 4 \quad r1$$

d)

$$
\begin{array}{r|rrrrrr}
 & 2 & -1 & 0 & -3 & -2 & 1 \\
2 & & 4 & 6 & 12 & 18 & 32 \\
\hline
 & 2 & 3 & 6 & 9 & 16 & 33 \\
\end{array}
\tag{7}
$$

$$2x^4 + 3x^3 + 6x^2 + 9x + 16 \quad r33$$

e)

$$
\begin{array}{r|rrrr}
 & 2 & 5 & -4 & -5 \\
-\frac{1}{2} & & -1 & -2 & 3 \\
\hline
 & 2 & 4 & -6 & -2 \\
\end{array}
\tag{8}
$$

$$2x^2 + 4x - 6 \quad r - 2$$