

More Practice: Dividing Polynomials

Find the Quotient (No remainder)

$$\begin{array}{r}
 x^2 + 3x + 4 \\
 x + 1 \overline{) x^3 + 4x^2 + 7x + 4} \\
 \underline{- x^3 + x^2} \\
 3x^2 + 7x \\
 \underline{- 3x^2 + 3x} \\
 4x + 4 \\
 \underline{- 4x + 4} \\
 0
 \end{array}$$

$$\begin{array}{r}
 3x^2 - 4x + 3 \\
 x - 2 \overline{) 3x^3 - 10x^2 + 11x - 6} \\
 \underline{- 3x^3 - 6x^2} \\
 -4x^2 + 11x \\
 \underline{- -4x^2 + 8x} \\
 3x - 6 \\
 \underline{- 3x + 6} \\
 0
 \end{array}$$

$$\begin{array}{r}
 2x^2 - 3x + 1 \\
 2x - 3 \overline{) 4x^3 - 12x^2 + 11x - 3} \\
 \underline{- 4x^3 - 6x^2} \\
 -6x^2 + 11x \\
 \underline{- -6x^2 + 9x} \\
 2x - 3 \\
 \underline{- 2x - 3} \\
 0
 \end{array}$$

$$\begin{array}{r}
 x^2 - x + 3 \\
 x + 1 \overline{) x^3 + 0x^2 + 2x + 3} \\
 \underline{- x^3 + x^2} \\
 -x^2 + 2x \\
 \underline{- -x^2 - x} \\
 3x + 3 \\
 \underline{- 3x + 3} \\
 0
 \end{array}$$

$$\begin{array}{r}
 x^2 - 4x + 8 \\
 x^2 + 2 \overline{) x^4 - 4x^3 + 6x^2 - 8x + 8} \\
 \underline{- x^4 + 2x^2} \\
 -4x^3 + 8x^2 - 8x \\
 \underline{- -4x^3 - 8x} \\
 8x^2 + 8 \\
 \underline{- 8x^2 + 8} \\
 0
 \end{array}$$

$$6. \frac{x^4 + 4x^3 + 2x^2 - 13x - 30}{(x+3)(x-2)}$$

$$\begin{array}{r}
 x^2 + 3x + 5 \\
 x^2 + x - 6 \overline{) x^4 + 4x^3 + 2x^2 - 13x - 30} \\
 \underline{- x^4 + x^3 - 6x^2} \\
 3x^3 + 8x^2 - 13x \\
 \underline{- 3x^3 + 3x^2 - 18x} \\
 5x^2 + 5x - 30 \\
 \underline{- 5x^2 + 5x - 30} \\
 0
 \end{array}$$

Find the Quotient and Remainder

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

$$\begin{array}{r}
 x^2 + x + 3 \\
 x + 1 \overline{) x^3 + 2x^2 + 4x + 1} \\
 \underline{- x^3 + x^2} \\
 x^2 + 4x \\
 \underline{- x^2 + x} \\
 3x + 1 \\
 \underline{- 3x + 3} \\
 -2
 \end{array}$$