

Find each quotient using polynomial long division.

1. $\frac{48x^3 - 56x^2 - 17x - 22}{4x - 5}$

2. $\frac{6x^3 - 14x^2 - 73x - 55}{2x^2 - 8x - 11}$

3. $\frac{3x^4 - 7x^3 + 5x - 13}{x + 8}$

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$$\begin{array}{r}
 12x^2 + x - 3 \\
 4x - 5 \overline{) 48x^3 - 56x^2 - 17x - 22} \\
 \underline{-(48x^3 - 60x^2)} \\
 4x^2 - 17x \\
 \underline{-(4x^2 - 5x)} \\
 -12x - 22 \\
 \underline{-(-12x + 15)} \\
 -37
 \end{array}$$

$$\begin{array}{r}
 3x + 5 \\
 2x^2 - 8x - 11 \overline{) 6x^3 - 14x^2 - 73x - 55} \\
 \underline{-(6x^3 - 24x^2 - 33x)} \\
 10x^2 - 40x - 55 \\
 \underline{-(10x^2 - 40x - 55)} \\
 0
 \end{array}$$

$3x + 5$

$12x^2 + x - 3 \quad R = -37$

3. $\frac{3x^4 - 7x^3 + 5x - 13}{x + 8}$

missing Quadratic Term

$$\begin{array}{r}
 3x^3 - 31x^2 + 248x - 1979 \\
 x + 8 \overline{) 3x^4 - 7x^3 + 0x^2 + 5x - 13} \\
 \underline{-(3x^4 + 24x^3)} \\
 -31x^3 + 0x^2 \\
 \underline{-(-31x^3 - 248x^2)} \\
 248x^2 + 5x \\
 \underline{-(248x^2 + 1984x)} \\
 -1979x - 13 \\
 \underline{-(-1979x - 15832)} \\
 15819
 \end{array}$$

$3x^3 - 31x^2 + 248x - 1979 \quad R = 15819$