

$$\begin{array}{r}
 4x^3 - 2x^2 + x + 1 \\
 \hline
 (8x^4 + 3x + 6) : (2x + 1) \\
 - 8x^4 + 4x^3 \\
 \hline
 = -4x^3 + 3x \\
 + 4x^3 + 2x^2 \\
 \hline
 = 2x^2 + 3x \\
 - 2x^2 + x \\
 \hline
 = 2x + 6 \\
 - 2x + 1 \\
 \hline
 = 5
 \end{array}$$

$$8x^4 + 3x + 6 = (4x^3 - 2x^2 + x + 1)(2x + 1) + 5$$