

5] $3x^3 - 7x + 10$ divided by $x - 1$ can be performed using synthetic division.

$$\begin{array}{r|rrrr} \underline{1} & 3 & 0 & -7 & 10 \\ & & 3 & 3 & -4 \\ \hline & 3 & 3 & -4 & 6 \end{array}$$

The quotient is $3x^2 + 3x - 4$ and the remainder is 6. This can also be found using long division as shown below.

$$\begin{array}{r} 3x^2 + 3x - 4 \\ \hline x - 1 \overline{) 3x^3 - 0x^2 - 7x + 10} \\ \underline{3x^3 - 3x^2} \\ 3x^2 - 7x \\ \underline{3x^2 - 3x} \\ -4x + 10 \\ \underline{-4x + 4} \\ 6 \end{array}$$