

Memorandum:

1) Given $f(x) = 2x^3 - 8x^2 + 4$

Determine the remainder if $f(x)$ is divided by $x - 2$

Solution:

$$\begin{array}{r} 2x^2 - 4x - 8 \\ x-2 \overline{) 2x^3 - 8x^2 + 0x + 4} \\ \underline{-2x^3 + 4x^2} \\ -4x^2 + 0x \\ \underline{-4x^2 - 8x} \\ -8x + 4 \\ \underline{+8x - 16} \\ -12 \end{array}$$

\therefore Remainder = -12

2) Divide $2x^3 - 9x^2 + 15$ by $2x - 5$

Solution:

$$\begin{array}{r} x^2 - 2x - 5 \\ 2x-5 \overline{) 2x^3 - 9x^2 + 0x + 15} \\ \underline{-2x^3 + 5x^2} \\ -4x^2 + 0x \\ \underline{+4x^2 - 10x} \\ -10x + 15 \\ \underline{+10x - 25} \\ -10 \end{array}$$