

Exercise 2I

Question 1:
(i)
$$(3x + 2)^3$$

= $(3x)^3 + (2)^3 + 3 \times 3x \times 2$ (3x + 2)
[Since $(a + b)^3 = a^3 + b^3 + 3ab$ (a + b)]
= $27x^3 + 8 + 18x$ (3x + 2)
= $27x^3 + 8 + 54x^2 + 36x$.
(ii) $(3a - 2b)^3$
= $(3a)^3 - (2b)^3 - 3 \times 3a \times 2b$ (3a - 2b)
[Since $(a - b)^3 = a^3 - b^3 - 3ab$ (a - b)]
= $27a^3 - 8b^3 - 18ab$ (3a - 2b)
= $27a^3 - 8b^3 - 54a^2b + 36ab^2$.
(iii) $\left(\frac{2}{3}x + 1\right)^3$
= $\left(\frac{2}{3}x\right)^3 + \left(1\right)^3 + 3 \times \frac{2}{3}x \times 1\left(\frac{2}{3}x + 1\right)$
[: $(a + b)^3 = a^3 + b^3 + 3ab$ $(a + b)$]
= $\frac{8}{27}x^3 + 1 + 2x\left(\frac{2}{3}x + 1\right)$
= $\frac{8}{27}x^3 + 1 + \frac{4}{3}x^2 + 2x$.

******* END ******