



Exercise 2F

Question 11:

$$\begin{aligned} & 8ab^2 - 18a^3 \\ &= 2a (4b^2 - 9a^2) \\ &= 2a [(2b)^2 - (3a)^2] \\ &= 2a (2b + 3a) (2b - 3a) \\ & \text{[Since } a^2 - b^2 = (a+b)(a-b)\text{]} \end{aligned}$$

Question 12:

$$\begin{aligned} & 3a^3b - 243ab^3 \\ &= 3ab (a^2 - 81b^2) \\ &= 3ab [(a)^2 - (9b)^2] \\ &= 3ab (a + 9b) (a - 9b) \\ & \text{[Since } a^2 - b^2 = (a+b)(a-b)\text{]} \end{aligned}$$

Question 13:

$$\begin{aligned} & (a + b)^3 - a - b \\ &= (a + b)^3 - (a + b) \\ &= (a + b) [(a + b)^2 - 1^2] \\ &= (a + b) (a + b + 1) (a + b - 1) \\ & \text{[Since } a^2 - b^2 = (a+b)(a-b)\text{]} \end{aligned}$$

Question 14:

$$\begin{aligned} & 108a^2 - 3(b - c)^2 \\ &= 3 [(36a^2 - (b - c)^2)] \\ &= 3 [(6a)^2 - (b - c)^2] \\ &= 3 (6a + b - c) (6a - b + c) \\ & \text{[Since } a^2 - b^2 = (a+b)(a-b)\text{]} \end{aligned}$$

Question 15:

$$\begin{aligned} & x^3 - 5x^2 - x + 5 \\ &= x^2 (x - 5) - 1 (x - 5) \\ &= (x - 5) (x^2 - 1) \\ &= (x - 5) (x + 1) (x - 1) \\ & \text{[Since } a^2 - b^2 = (a+b)(a-b)\text{]} \end{aligned}$$

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