



Exercise 2F

Question 21:

$$\begin{aligned} &4x^2 - 9y^2 - 2x - 3y \\ &= (2x)^2 - (3y)^2 - (2x + 3y) \\ &= (2x + 3y)(2x - 3y) - (2x + 3y) \\ &[\text{Since } a^2 - b^2 = (a+b)(a-b)] \\ &= (2x + 3y)(2x - 3y - 1) \end{aligned}$$

Question 22:

$$\begin{aligned} &x^4 - 1 \\ &= (x^2)^2 - 1^2 \\ &= (x^2 + 1)(x^2 - 1) \\ &= (x^2 + 1)(x + 1)(x - 1) \\ &[\text{Since } a^2 - b^2 = (a+b)(a-b)] \end{aligned}$$

Question 23:

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

Question 24:

$$\begin{aligned} &x^4 - 625 \\ &= (x^2)^2 - (25)^2 \\ &= (x^2 + 25)(x^2 - 25) \\ &[\text{Since } a^2 - b^2 = (a+b)(a-b)] \\ &= (x^2 + 25)(x^2 - 5^2) \\ &= (x^2 + 25)(x + 5)(x - 5) \\ &[\text{Since } a^2 - b^2 = (a+b)(a-b)] \end{aligned}$$

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