

$$\begin{aligned} 2 \text{ (i)} \quad & (x+3)(x+7) \\ &= x^2 + (3+7)x + 3 \times 7 \\ &= x^2 + 10x + 21 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad & (4x+5)(4x+1) \\ &= (4x)^2 + (5+1)4x + 1 \times 5 \\ &= 16x^2 + 24x + 5 \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad & (4x-5)(4x-1) \\ &= (4x)^2 + (-5+(-1))4x + (-5)(-1) \\ &= 16x^2 - 24x + 5 \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad & (4x+5)(4x-1) \\ &= (4x)^2 + [5+(-1)]4x + 5(-1) \\ &= 16x^2 + 16x - 5 \end{aligned}$$

$$\begin{aligned} \text{(v)} \quad & (2x+5y)(2x+3y) \\ &= (2x)^2 + (5y+3y)2x + 5y \times 3y \\ &= 4x^2 + 16xy + 15y^2 \end{aligned}$$

$$\begin{aligned} \text{(vi)} \quad & (2a^2+9)(2a^2+5) \\ &= (2a^2)^2 + (9+5)2a^2 + 9 \times 5 \\ &= 4a^4 + 28a^2 + 45 \end{aligned}$$