

Surds 2

Expanding Brackets

Example 1

$$\begin{aligned} & (5 + \sqrt{7})(3 - \sqrt{7}) \\ &= 5 \times 3 + 3\sqrt{7} - 5\sqrt{7} - 7 \\ &= 8 - 2\sqrt{7} \end{aligned}$$

Example 2

$$\begin{aligned} & (8 + \sqrt{3})(2 + \sqrt{5}) \\ &= 16 + 2\sqrt{3} + 8\sqrt{5} + \sqrt{15} \end{aligned}$$

Example 3

$$\begin{aligned} & (3 + 2\sqrt{5})(4 + 3\sqrt{5}) \\ &= 12 + 8\sqrt{5} + 9\sqrt{5} + 30 \\ &= 42 + 17\sqrt{5} \end{aligned}$$

$$\begin{aligned} & 2\sqrt{5} \times 3\sqrt{5} \\ & 2 \times \sqrt{5} \times 3 \times \sqrt{5} \\ & 6 \times 5 \end{aligned}$$

Example 4

$$\begin{aligned} & (4 - 3\sqrt{3})(5 - \sqrt{3}) \\ &= 20 - 15\sqrt{3} - 4\sqrt{3} + 9 \\ &= 29 - 19\sqrt{3} \end{aligned}$$