

Surds - ANSWERS

1.

$$\begin{aligned} \text{a. } & \sqrt{27} \\ & = \sqrt{9 \times 3} \\ & = 3\sqrt{3} \end{aligned}$$

$$\begin{aligned} \text{b. } & \sqrt{12} \\ & = \sqrt{4 \times 3} \\ & = 2\sqrt{3} \end{aligned}$$

2.

$$\begin{aligned} \text{a. } & \sqrt{27} + \sqrt{12} \\ & = 3\sqrt{3} + 2\sqrt{3} \\ & = 5\sqrt{3} \\ & = \sqrt{25} \times \sqrt{3} \\ & = \sqrt{75} \end{aligned}$$

$$\begin{aligned} \text{b. } & \sqrt{27} - \sqrt{12} \\ & = 3\sqrt{3} - 2\sqrt{3} \\ & = 1\sqrt{3} \\ & = \sqrt{3} \end{aligned}$$

$$\begin{aligned} \text{c. } & \sqrt{27} \times \sqrt{12} \\ & = 3\sqrt{3} \times 2\sqrt{3} \\ & = 3 \times 2 \times \sqrt{3} \times \sqrt{3} \\ & = 3 \times 2 \times 3 \\ & = 18 \end{aligned}$$

$$\begin{aligned} \text{d. } & \frac{\sqrt{27}}{\sqrt{12}} \\ & = \frac{\sqrt{27}}{\sqrt{12}} \\ & = \frac{3\sqrt{3}}{3\sqrt{2}} \\ & = \frac{\sqrt{3}}{\sqrt{2}} \\ & = \sqrt{\frac{3}{2}} \\ & = \sqrt{1.5} \end{aligned}$$