

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

2.1

- $75 = 25 \times 3$ and 25 is a square

$$\sqrt{75} = \mathbf{5\sqrt{3}}$$

2.2

- $\sqrt{8} = 2\sqrt{2}$ and $\sqrt{18} = 3\sqrt{2}$

$$2\sqrt{2} + 3\sqrt{2} = \mathbf{5\sqrt{2}}$$

2.3

- multiply top and bottom by $\sqrt{5}$: $\frac{10\sqrt{5}}{5}$

$$= \mathbf{2\sqrt{5}}$$

3.1

(a)

- expand: $9 - 3\sqrt{2} + 3\sqrt{2} - 2$ — the middle terms cancel

$$= \mathbf{7}$$

(b)

- $\sqrt{48} = 4\sqrt{3}$ and $\sqrt{12} = 2\sqrt{3}$

$$4\sqrt{3} - 2\sqrt{3} = \mathbf{2\sqrt{3}}$$

3.2

- multiply top and bottom by $\sqrt{6}$: $\frac{8\sqrt{6}}{6}$
- divide top and bottom by 2

$$= \frac{\mathbf{4\sqrt{6}}}{\mathbf{3}}$$

3.3

- side = $\sqrt{18}$, and $18 = 9 \times 2$

$$= \mathbf{3\sqrt{2}} \text{ cm}$$