

Examples

$$\begin{aligned} 1. \quad & \sqrt{200} + \sqrt{50} \\ & \sqrt{100 \cdot 2} + \sqrt{25 \cdot 2} \\ & 10\sqrt{2} + 5\sqrt{2} \\ & 15\sqrt{2} \end{aligned}$$

$$\begin{aligned} 2. \quad & 5\sqrt{3} \cdot 8\sqrt{7} \\ & (5 \cdot 8)(\sqrt{3} \cdot \sqrt{7}) \\ & 40\sqrt{21} \end{aligned}$$

$$\begin{array}{l} 3. \quad 7\sqrt{3} \cdot -2\sqrt{12} \\ 7\sqrt{3} \cdot -2\sqrt{4 \cdot 3} \\ 7\sqrt{3} \cdot -2 \cdot 2\sqrt{3} \\ 7\sqrt{3} \cdot -4\sqrt{3} \\ (7 \cdot 4)(\sqrt{3} \cdot \sqrt{3}) \\ (-28)(3) \\ -84 \end{array} \quad \left. \begin{array}{l} \text{or} \\ (7 \cdot -2)(\sqrt{3} \cdot \sqrt{12}) \\ (-14)(\sqrt{36}) \\ (-14)(6) \\ -84 \end{array} \right\} \begin{array}{l} 4. \quad -9\sqrt{121} \\ -9 \cdot 11 \\ -99 \end{array}$$

$$5. \quad 3\sqrt{6} - 10\sqrt{6} \\ -7\sqrt{6}$$

$$6. \quad \boxed{12\sqrt{2}} + 13 - \boxed{7\sqrt{2}} \\ 5\sqrt{2} + 13$$

$$7. \quad (7\sqrt{3})^2 \\ \left. \begin{array}{l} 7\sqrt{3} \cdot 7\sqrt{3} \\ (7 \cdot 7)(\sqrt{3} \cdot \sqrt{3}) \\ (49)(3) \\ 147 \end{array} \right\} \begin{array}{l} \text{or} \\ 7^2 \cdot \sqrt{3}^2 \\ 49 \cdot 3 \\ 147 \end{array}$$

$$8. \quad \frac{\sqrt{24}}{\sqrt{3}} \\ \sqrt{\frac{24}{3}} = \sqrt{8} \\ = \sqrt{4 \cdot 2} \\ = 2\sqrt{2}$$

$$9. \frac{5}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{5\sqrt{3}}{\sqrt{9}} = \frac{5\sqrt{3}}{3}$$

$$10. \frac{24}{\sqrt{3}} \frac{\sqrt{3}}{\sqrt{3}}$$

$$\frac{24\sqrt{3}}{\sqrt{9}} = \frac{24\sqrt{3}}{3} = 8\sqrt{3}$$