

數學計算練習 - 詳解

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第 1 回詳解

$$\begin{aligned} 1. & \sqrt{26 + 8\sqrt{3}} \\ &= \sqrt{24 + 2 + 2\sqrt{24 \times 2}} \\ &= \sqrt{(\sqrt{24} + \sqrt{2})^2} \\ &= |\sqrt{24} + \sqrt{2}| \\ &= \sqrt{24} + \sqrt{2} \end{aligned}$$

$$\begin{aligned} 7. & \sqrt{23 + 2\sqrt{130}} \\ &= \sqrt{13 + 10 + 2\sqrt{13 \times 10}} \\ &= \sqrt{(\sqrt{13} + \sqrt{10})^2} \\ &= |\sqrt{13} + \sqrt{10}| \\ &= \sqrt{13} + \sqrt{10} \end{aligned}$$

$$\begin{aligned} 2. & \sqrt{41 + 6\sqrt{46}} \\ &= \sqrt{23 + 18 + 2\sqrt{23 \times 18}} \\ &= \sqrt{(\sqrt{23} + \sqrt{18})^2} \\ &= |\sqrt{23} + \sqrt{18}| \\ &= \sqrt{23} + \sqrt{18} \end{aligned}$$

$$\begin{aligned} 8. & \sqrt{21 - 4\sqrt{26}} \\ &= \sqrt{13 + 8 - 2\sqrt{13 \times 8}} \\ &= \sqrt{(\sqrt{13} - \sqrt{8})^2} \\ &= |\sqrt{13} - \sqrt{8}| \\ &= \sqrt{13} - \sqrt{8} \end{aligned}$$

$$\begin{aligned} 3. & \sqrt{14 - 2\sqrt{13}} \\ &= \sqrt{13 + 1 - 2\sqrt{13 \times 1}} \\ &= \sqrt{(\sqrt{13} - \sqrt{1})^2} \\ &= |\sqrt{13} - \sqrt{1}| \\ &= \sqrt{13} - \sqrt{1} \end{aligned}$$

$$\begin{aligned} 9. & \sqrt{33 + 2\sqrt{266}} \\ &= \sqrt{19 + 14 + 2\sqrt{19 \times 14}} \\ &= \sqrt{(\sqrt{19} + \sqrt{14})^2} \\ &= |\sqrt{19} + \sqrt{14}| \\ &= \sqrt{19} + \sqrt{14} \end{aligned}$$

$$\begin{aligned} 4. & \sqrt{25 - 2\sqrt{66}} \\ &= \sqrt{22 + 3 - 2\sqrt{22 \times 3}} \\ &= \sqrt{(\sqrt{22} - \sqrt{3})^2} \\ &= |\sqrt{22} - \sqrt{3}| \\ &= \sqrt{22} - \sqrt{3} \end{aligned}$$

$$\begin{aligned} 10. & \sqrt{24 + 6\sqrt{7}} \\ &= \sqrt{21 + 3 + 2\sqrt{21 \times 3}} \\ &= \sqrt{(\sqrt{21} + \sqrt{3})^2} \\ &= |\sqrt{21} + \sqrt{3}| \\ &= \sqrt{21} + \sqrt{3} \end{aligned}$$

$$\begin{aligned} 5. & \sqrt{14 - 6\sqrt{5}} \\ &= \sqrt{9 + 5 - 2\sqrt{9 \times 5}} \\ &= \sqrt{(\sqrt{9} - \sqrt{5})^2} \\ &= |\sqrt{9} - \sqrt{5}| \\ &= \sqrt{9} - \sqrt{5} \end{aligned}$$

$$\begin{aligned} 11. & \sqrt{23 + 8\sqrt{7}} \\ &= \sqrt{16 + 7 + 2\sqrt{16 \times 7}} \\ &= \sqrt{(\sqrt{16} + \sqrt{7})^2} \\ &= |\sqrt{16} + \sqrt{7}| \\ &= \sqrt{16} + \sqrt{7} \end{aligned}$$

$$\begin{aligned} 6. & \sqrt{40 - 2\sqrt{399}} \\ &= \sqrt{21 + 19 - 2\sqrt{21 \times 19}} \\ &= \sqrt{(\sqrt{21} - \sqrt{19})^2} \\ &= |\sqrt{21} - \sqrt{19}| \\ &= \sqrt{21} - \sqrt{19} \end{aligned}$$

$$\begin{aligned} 12. & \sqrt{30 + 6\sqrt{21}} \\ &= \sqrt{21 + 9 + 2\sqrt{21 \times 9}} \\ &= \sqrt{(\sqrt{21} + \sqrt{9})^2} \\ &= |\sqrt{21} + \sqrt{9}| \\ &= \sqrt{21} + \sqrt{9} \end{aligned}$$

$$\begin{aligned}
 & \mathbf{13.} \sqrt{17 + 4\sqrt{13}} \\
 &= \sqrt{13 + 4 + 2\sqrt{13} \times 4} \\
 &= \sqrt{(\sqrt{13} + \sqrt{4})^2} \\
 &= |\sqrt{13} + \sqrt{4}| \\
 &= \sqrt{13} + \sqrt{4}
 \end{aligned}$$

$$\begin{aligned}
 & \mathbf{14.} \sqrt{22 + 4\sqrt{30}} \\
 &= \sqrt{12 + 10 + 2\sqrt{12} \times 10} \\
 &= \sqrt{(\sqrt{12} + \sqrt{10})^2} \\
 &= |\sqrt{12} + \sqrt{10}| \\
 &= \sqrt{12} + \sqrt{10}
 \end{aligned}$$