

NS Homework Juras

① a) $\sqrt{147} - 5\sqrt{3}$ b) $\sqrt{2}(\sqrt{3} + \sqrt{2}) - \sqrt{6}$

$$\begin{aligned} &= \sqrt{49} \times \sqrt{3} - 5\sqrt{3} \\ &= 7\sqrt{3} - 5\sqrt{3} \quad \checkmark \\ &= 2\sqrt{3} \quad \checkmark \end{aligned}$$

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② $2\sqrt{5} + \sqrt{20} - \sqrt{45}$

$$\begin{aligned} &= 2\sqrt{5} + \sqrt{4} \times \sqrt{5} - \sqrt{9} \times \sqrt{5} \\ &= 2\sqrt{5} + 2\sqrt{5} - 3\sqrt{5} \quad \checkmark \\ &= \sqrt{5} \quad \checkmark \end{aligned}$$

③ $\frac{5}{2\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}}$ ✓

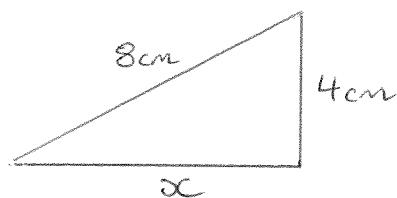
$$\begin{aligned} &= \frac{5\sqrt{3}}{2\sqrt{9}} \\ &= \frac{5\sqrt{3}}{2 \times 3} \\ &= \frac{5\sqrt{3}}{6} \quad \checkmark \quad \checkmark \end{aligned}$$

④ $\frac{5}{4-\sqrt{3}} \times \frac{4+\sqrt{3}}{4+\sqrt{3}}$ ✓

$$\begin{aligned} &= \frac{5(4+\sqrt{3})}{(4-\sqrt{3})(4+\sqrt{3})} \\ &= \frac{5(4+\sqrt{3})}{16+4\sqrt{3}-4\sqrt{3}-\sqrt{9}} \\ &= \frac{5(4+\sqrt{3})}{16-3} \\ &= \frac{5(4+\sqrt{3})}{13} \quad \checkmark \quad \checkmark \end{aligned}$$

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⑤ a)



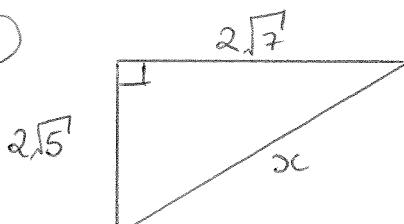
$$\begin{aligned} x^2 &= 8^2 - 4^2 \\ &= 64 - 16 \\ &= 48 \\ x &= \sqrt{48} \\ &= \sqrt{16} \times \sqrt{3} \\ &= 4\sqrt{3} \text{ cm} \quad \checkmark \end{aligned}$$

b) $A = \frac{1}{2}bh$

$$\begin{aligned} &= \frac{1}{2} \times 4\sqrt{3} \times 4 \\ &= 8\sqrt{3} \text{ cm}^2 \quad \checkmark \quad \checkmark \end{aligned}$$

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⑥



$$\begin{aligned} x^2 &= (2\sqrt{5})^2 + (2\sqrt{7})^2 \\ &= 4\sqrt{25} + 4\sqrt{49} \\ &= 4 \times 5 + 4 \times 7 \\ &= 20 + 28 \\ &= 48 \quad \checkmark \end{aligned}$$

$$\begin{aligned} x &= \sqrt{48} \\ &= \sqrt{16} \times \sqrt{3} \\ &= 4\sqrt{3} \text{ units} \quad \checkmark \quad \checkmark \end{aligned}$$

Total $\frac{1}{20}$