

$$\Rightarrow \frac{b}{\sin B} = \frac{a}{\sin A} \Rightarrow \sin B = \frac{b \sin A}{a} = \frac{\frac{2\sqrt{4}}{3} \times \frac{1}{2}}{10} = \frac{\sqrt{4}}{15} = \frac{2}{15}$$

$B = 25^\circ$ or $120^\circ - 25^\circ = 95^\circ = C$

$$\frac{\sin C}{c} = \frac{\sin B}{b} \Rightarrow \frac{\sin C}{c} = \frac{c}{b} \Rightarrow (b^2 - c^2) \frac{c}{b} = c$$

$$\Rightarrow b - \frac{c}{b} = 1 \Rightarrow b^2 - b - c = 0 \Rightarrow a^2 + c^2 = b^2 \Rightarrow b = -1 \text{ یا } 2 \Rightarrow b = 2$$

(به نال به نال)

سوالها را با جویبار

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$$\frac{AC}{\sin D} = \frac{DC}{\sin A} \Rightarrow \frac{AC}{\frac{\sqrt{2}}{2}} = \frac{DC}{\frac{\sqrt{2}}{2}} \Rightarrow AC = DC \Rightarrow AC = 2\sqrt{2}$$

$\cos C = \frac{\sqrt{2}}{2} = \frac{1}{\sqrt{2}} = \frac{1}{2} \Rightarrow C = 60^\circ$

$$b^2 = a^2 + c^2 - 2ac \cos B \Rightarrow 149 = 200 + 221 - 120 \cos B \Rightarrow 149 = 421 - 120 \cos B$$

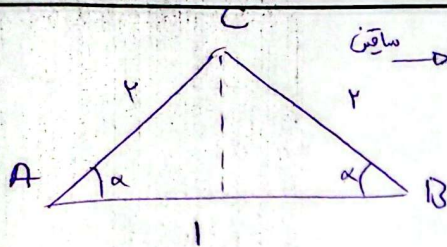
$$\Rightarrow 472 = 120 \cos B \Rightarrow \cos B = \frac{472}{120} = \frac{118}{30} = \frac{59}{15} = \frac{1}{10} \Rightarrow \sin B = \frac{3}{10}$$

$$a^2 = b^2 + c^2 - 2bc \cos A = 2(2 + 2\sqrt{2}) + 14 - 14(1 + \sqrt{2}) \frac{1}{2}$$

$$\Rightarrow 14 + 4\sqrt{2} + 14 - 14 - 7\sqrt{2} = 14 \Rightarrow a^2 = 14 \Rightarrow a = \sqrt{14} = 2\sqrt{4}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} \Rightarrow \frac{2\sqrt{4}}{\frac{1}{2}} = \frac{2}{\frac{3}{10}} \Rightarrow t = \frac{2 \times \frac{1}{2}}{\frac{3}{10}} = \frac{1}{3} \Rightarrow \sin B = \frac{1}{3} \Rightarrow B = 18^\circ$$

$\Rightarrow 90^\circ + 18^\circ + C = 180^\circ \Rightarrow C = 72^\circ$



سابق $\rightarrow C=1 = a \cos B + b \cos A = 2 \cos \alpha \rightarrow \cos \alpha = \frac{1}{2}$

~~$DE^2 = AE^2 + AD^2 - 2AEAD \cos \alpha$~~

$\rightarrow a^2 = 4 + 4 - 2 \times 1 \times \frac{1}{2} = 8 - 1 = 7$

$\rightarrow a = \sqrt{7}$ (برابرترین ضلع)

$a^2 = b^2 + c^2 - 2bc \cos A = 4 + 4 - 2 \times 1 \times \frac{1}{2} = 8 - 1 = 7 \rightarrow a = \sqrt{7}$ (الف)

$a = \sqrt{7}$

$S = \frac{1}{2} bc \sin A = 1 \times 1 \times \frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{2}$ (ج)

$a^2 = b^2 + c^2 - 2bc \cos A \rightarrow \frac{b^2 + c^2 + 2bc - b^2 - c^2 + 2bc \cos A}{bc(\cos A + 1)}$

$= \frac{2bc(1 + \cos A)}{bc(1 + \cos A)} = 2$

~~$a^2 + b^2 - c^2 = a^2 + a^2 b - a^2 c \rightarrow (b-c)(b^2 + bc + c^2) = a^2(b-c)$~~

$\rightarrow a^2 = b^2 + bc + c^2 = b^2 + c^2 - 2bc \cos A \rightarrow \cos A = -\frac{1}{2} \rightarrow A = 120^\circ$

$(3-a)(1+c) \times \frac{1}{2} \times \frac{1}{2} = 1 \rightarrow (-3a + 1 + c) = 2$

$\rightarrow 3a - 1 + c = 0 \rightarrow a + b + c = 0 \rightarrow a = 1 \rightarrow \cos \theta = 1$

$\rightarrow C=2, b=2 \rightarrow a^2 = b^2 + c^2 - 2bc \cos A \rightarrow a^2 = 4 + 4 - (4 \times \frac{\sqrt{3}}{2} \times 2 \times \frac{1}{2})$

$\rightarrow a^2 = 4 - (4\sqrt{3}) \rightarrow a = \sqrt{4 - 4\sqrt{3}}$