

$$\begin{aligned} \frac{b}{\sin B} &= \frac{a}{\sin A} \rightarrow \sin B = \frac{b \sin A}{a} \\ &= \frac{10\sqrt{4}}{10} \times \frac{\sqrt{3}}{2} \times \frac{1}{2} = \frac{\sqrt{3}}{2} \rightarrow B = 60^\circ \text{ or } 120^\circ \\ &\rightarrow 120^\circ - 120^\circ = 0^\circ \text{ (invalid)} \end{aligned}$$

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

$$\rightarrow b - \frac{c^2}{b} = 1 \rightarrow b^2 - b - 1 = 0 \rightarrow \boxed{a^2 + c^2 = b^2} \rightarrow b = \sqrt{2} \rightarrow \boxed{b = 2}$$

(نشان بدهد)

سوالها را با جویبار بنویس!

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$$\begin{aligned} \frac{AC}{\sin D} &= \frac{DC}{\sin A} \rightarrow \frac{AC}{\frac{\sqrt{2}}{2}} = \frac{DC}{\frac{\sqrt{2}}{2}} \rightarrow AC = DC \\ \cos 60^\circ &= \frac{DC}{AC} = \frac{1}{2} \rightarrow \boxed{91 = C} \end{aligned}$$

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$$b^2 = a^2 + c^2 - 2ac \cos B \rightarrow 149 = 200 + 281 - 180 \cos B \rightarrow 149 = 481 - 180 \cos B$$

$$\rightarrow 472 = 180 \cos B \rightarrow \cos B = \frac{472}{180} = \frac{118}{45} = \frac{89}{30} \rightarrow \boxed{\sin B = \frac{4}{5}}$$

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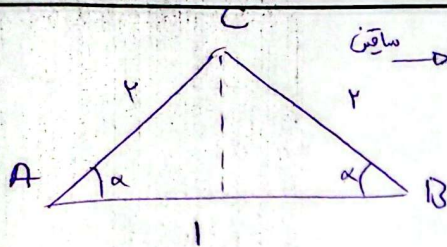
$$a^2 = b^2 + c^2 - 2bc \cos A = 2(2 + 2\sqrt{2}) + 14 - 14(1 + \sqrt{2}) \frac{1}{2}$$

$$\rightarrow 14 + 4\sqrt{2} + 14 - 14 - 14\sqrt{2} = 4 \rightarrow a^2 = 4 \rightarrow \boxed{a = 2}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} \rightarrow \frac{2}{\frac{1}{2}} = \frac{2}{\sin B} \rightarrow \sin B = \frac{1}{2} \rightarrow \boxed{B = 30^\circ}$$

$$\rightarrow 90^\circ + 30^\circ + C = 180^\circ \rightarrow \boxed{C = 60^\circ}$$

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

~~$DE^2 = AE^2 + AD^2 - 2AE \cdot AD \cos A$~~

$\rightarrow a^2 = 1^2 + 1^2 - 2 \cdot 1 \cdot 1 \cdot \frac{1}{2} = 1 + 1 - 1 = 1$

$\rightarrow a = 1$ (برابر است با ضلع دیگر)

$a^2 = b^2 + c^2 - 2bc \cos A = 4^2 + 4^2 - 2 \cdot 4 \cdot 4 \cdot \frac{1}{2} = 16 + 16 - 16 = 16 = a^2$

$a = 4$

$S = \frac{1}{2} bc \sin A = 4 \times 4 \times \frac{1}{2} \times \frac{\sqrt{3}}{2} = 4\sqrt{3}$

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

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

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

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

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

$\rightarrow 1 - a + c = 2 \rightarrow a + b + c = 0 \rightarrow a = 1 \rightarrow \cos \theta = 1$

$\rightarrow C = 4, b = 2 \rightarrow a^2 = b^2 + c^2 - 2bc \cos A \rightarrow a^2 = 4 + 16 - (4 \times 2 \times \frac{1}{2})$

$\rightarrow a^2 = 10 - 4 = 6 \rightarrow a = \sqrt{6}$