ملینا کیای

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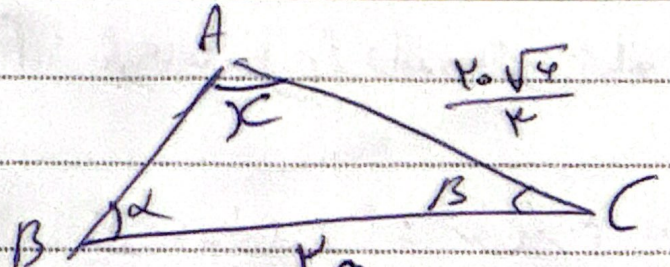

$\frac{۲۰\sqrt{۶}}{۲}$

$\alpha + \beta = ۱۲۰$

$x = ۶۰$

$\frac{a}{\sin\alpha} = \frac{b}{\sin B}$

$\frac{\frac{\sqrt{۳}}{۲}}{۲۵} = \frac{۲}{\frac{۲۰\sqrt{۶}}{۳}}$

$\frac{\sqrt{۳} \times ۲۰\sqrt{۶}}{۶۰ \times ۳} = \frac{\sqrt{۱۸}}{۶} = \frac{۳\sqrt{۲}}{۶} = \frac{\sqrt{۲}}{۲}$

$B = ۴۵$

$C = ۷۵$

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(۴)

$$\frac{DC}{\sin A} = \frac{AC}{\sin D} \qquad \frac{۲\sqrt{۲}}{\frac{\sqrt{۲}}{۲}} = \frac{x}{\frac{\sqrt{۳}}{۲}} \rightarrow x = ۲\sqrt{۳}$$

$$\sin ۶۰ \rightarrow \frac{\sqrt{۳}}{۲} \Rightarrow \frac{x}{۲\sqrt{۳}} \qquad \boxed{x = ۳}$$

$\frac{\sqrt{2}}{2} \quad \frac{\sqrt{3}}{2}$

$\sin 60 \Rightarrow \frac{\sqrt{3}}{2} = \frac{2\sqrt{3}}{4}$

(۳)

$\frac{c}{\sin c} = \frac{b}{\sin b} \rightarrow \frac{\sin b}{\sin c} = \frac{b}{c} \xrightarrow[\text{ضرب}]{\text{بکلس}} (b^2-2)\frac{\sin c}{\sin b} = \frac{c}{b}(b^2-2)$

b^2-2

$\frac{b^2-2}{b} = 1 \longrightarrow b = 2$ یا $b = -1$ غ ق ق

(۴)

$a^2 + c^2 - 2ab\cos\beta = b$

$1+9-6(4)\cos\beta \rightarrow \cos\beta = \frac{1}{4}$

$\sin\beta = \frac{\sqrt{15}}{4}$

(۵)

$a^2 = (4+(4+8\sqrt{3} - 8 - 8\sqrt{3} = 24$

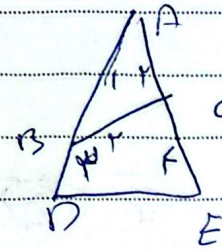
$a = 2\sqrt{6}$

$\frac{6}{\sin\beta} = \frac{2(1+\sqrt{3})}{\sin c} \rightarrow \sin\beta = \frac{\sqrt{3}}{2}$

$\beta = 60$

$180 - (45+60) = 75$

Arman



۹) $BC^2 = AC^2 + AB^2 - 2\,AC \times AB \times \cos\alpha$

$a = 4\cos\alpha$

$DE^2 = 4^2 + 4^2 - 2(4)(4)\cos\alpha \Rightarrow DE = \sqrt{16}$

۷) الف)

$a^2 = b^2 + c^2 + 2bc\cos\alpha$

$a^2 = 25 + 49 = 74 \times \frac{1}{2}$

$a^2 = 37$

$a = 7$

ب) $\frac{1}{2} \times 5 \times 8 \times \frac{\sqrt{3}}{2} = 10\sqrt{3}$

۸) $a^2 = b^2 + c^2 - 2bc\cos A$

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

۹) قبل

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

$b^2 + c^2 + bc = a^2 = b^2 + c^2 - 2bc\cos A$

$bc = -2bc(\cos A) \rightarrow \cos A = -\frac{1}{2} \quad A = 120$

۱۰) $\frac{1}{2}(2 - \cos\theta)(1+\cos\theta) \times \sin 30 = 2$

$4\cos^2\theta - 4\cos\theta + 3 = 0 \longrightarrow$ ✓

$\cos\theta = \frac{3}{2}$ ✗

$a^2 = b^2 + c^2 - 2bc\cos A = 4 + 4 - 8\cos 30 = 8 - 4\sqrt{3}$

Arman