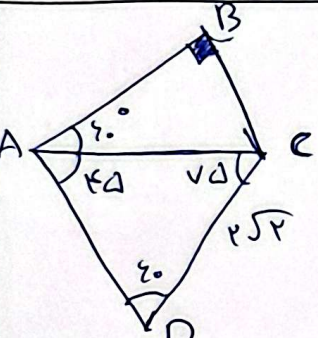


$$\frac{2.56}{\sqrt{3}} = \frac{2}{\sin B} \rightarrow \sin B = \frac{\sqrt{3}}{2} \rightarrow B = 60^\circ$$

$$B + C = 120^\circ \rightarrow C = 60^\circ$$
۲



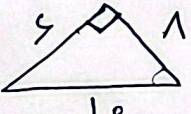
$$\frac{2.56}{\sqrt{3}} = \frac{AC}{\frac{\sqrt{3}}{2}} \rightarrow AC = 2.56$$

$$\frac{2.56}{1} = \frac{BC}{\frac{\sqrt{3}}{2}} \rightarrow BC = 2.56$$
۲

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

$$\rightarrow b = b^2 - 2 \rightarrow b + 2 = b^2 \rightarrow b = 2 \rightarrow \text{X}$$
۲

$$13^2 = 2^2 + 21^2 - 2(2)(21)(\cos B) \rightarrow 476 = 140 \cos B$$

$$\frac{1}{10} = \cos B \rightarrow \sin B = \frac{3}{10}$$

۲

الف) $a^2 = 4^2 + (2+2.56)^2 - 2(4)(2+2.56)(\frac{1}{2}) \rightarrow a^2 = 24 \rightarrow a = 2.4$

$$\frac{2.4}{\sqrt{3}} = \frac{4}{\sin B} = \frac{2+2.56}{\sin C}$$

$$\sin B = \frac{\sqrt{3}}{2} \rightarrow B = 60^\circ$$

$$\sin C = \frac{2+2.56}{2.4} \rightarrow C = 60^\circ$$
۲

$$4 = 1 + 4 - 2(1)(2)(\cos A) \rightarrow \cos A = \frac{1}{4} \checkmark$$

$$(DE)^2 = 1^2 + 2^2 - 2(1)(2)\left(\frac{1}{4}\right) \rightarrow (DE)^2 = 4 \rightarrow DE = 2 \checkmark$$

(4)

الف) $(BC)^2 = 2^2 + 4^2 - (2)(4)(1)\left(\frac{1}{4}\right) \rightarrow BC = 4 \checkmark$

ب) $\delta = \frac{1}{2} \times \frac{\sqrt{3}}{4} \times 4 \times 4 = 2\sqrt{3} \checkmark$

(4)

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

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

(4)

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

$$b^2 - c^2 = a^2b - a^2c \rightarrow b(b^2 - a^2) - c(c^2 - a^2) = 0$$

$$-(b - c)(a^2 - b^2 - bc - c^2) = 0 \rightarrow a^2 = b^2 + bc + c^2 \checkmark$$

لغى قوسه صفر بانه

$$b^2 + c^2 - 2bc \cos \theta = b^2 + c^2 + bc \rightarrow \cos \theta = \frac{bc}{-2bc}$$

A = 120°

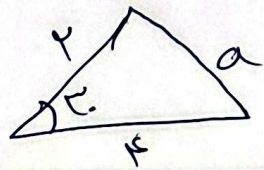
(4)

(-1/2)

$$\frac{1}{2} \times \frac{1}{2} \times (2 - \cos \theta)(1 + 2 \cos \theta)^2 \rightarrow 2 + 4 \cos \theta - 2 \cos^2 \theta = 1$$

$$2 \cos^2 \theta - 4 \cos \theta + 1 = 0 \rightarrow \cos \theta = \frac{2 \pm \sqrt{3}}{2} \checkmark$$

(4)



$$a^2 = 2^2 + 4^2 - 2(2)(4)\left(\frac{\sqrt{3}}{2}\right) \rightarrow a^2 = 12 - 8\sqrt{3} \checkmark$$