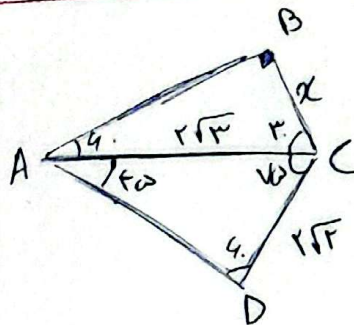


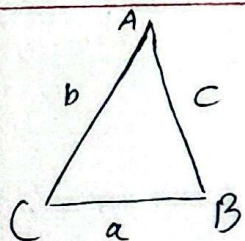


$$\Rightarrow \sin \hat{B} = \frac{1 \cdot \sqrt{11}}{14.5}, \frac{\sqrt{11}}{14.5} \Rightarrow \hat{B} = 4.0^\circ, 17. - 4.0^\circ = 13.0^\circ$$



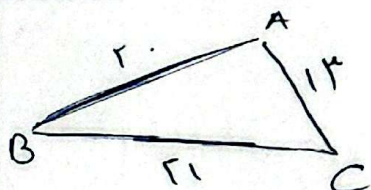
$$\frac{a}{\sin A} = \frac{d}{\sin D} \Rightarrow \frac{r\sqrt{r}}{\frac{\sqrt{r}}{r}} = \frac{d}{\frac{\sqrt{r}}{r}} \Rightarrow \cancel{r\sqrt{r}} \cdot \frac{\sqrt{r}}{r} = \frac{r}{\sqrt{r}} \cdot r\sqrt{r} \quad (5)$$

$$\frac{\sqrt{3}}{2} \times 2\sqrt{3} = 3 \Rightarrow x = 3$$



$$c = (b' - r) \frac{\sin \hat{C}}{\sin \hat{B}}, \quad \frac{b}{\sin \hat{B}} = \frac{c}{\sin \hat{C}} = \frac{a}{\sin \hat{A}}$$

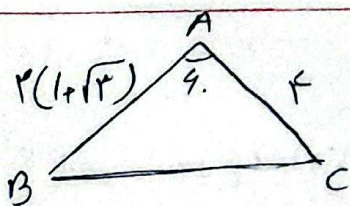
$$\Rightarrow (b^r - r) \frac{C}{b} \subset C \rightarrow \frac{b^r - r}{b} = 1 \Rightarrow b^r - b - r = 0 \Rightarrow b = -1, r = 1$$



$$b^T, a^T, c^T - r a c (C.s \hat{\beta}) \Rightarrow 149, 111, 1, \dots - \underbrace{r(c^T)(111)}_{\wedge \xi} (C.s \hat{\beta})$$

$$\wedge E. C \wedge \hat{\beta} \wedge \wedge \vdash 1 - 149 \Rightarrow C \wedge \hat{\beta} \wedge \wedge$$

$$\cos \hat{B} = 1 - \sin \hat{B} \Rightarrow 0,48 = 1 - \sin \hat{B} \Rightarrow \sin \hat{B} = 0,52 \Rightarrow \hat{B} = 31,3^\circ$$



$$a^r, b^r, c^r - \gamma_{bc}(G, \hat{A})$$

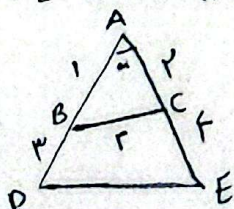
$$a^2, 14, 14, 14\sqrt{r} - 14 - 14\sqrt{r} \Rightarrow a^2, 14 \Rightarrow a = \sqrt{14}$$

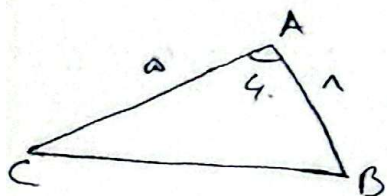
الف) انذاره؟

$$\frac{a}{\sin \hat{A}} \cdot \frac{b}{\sin \hat{B}} \Rightarrow \frac{\frac{r\sqrt{4}}{\sqrt{r}}}{\frac{r}{r}} = \frac{f}{\sin \hat{B}} \Rightarrow f \cdot \frac{\sqrt{r}}{r} \cdot \frac{1}{\frac{r}{r}} \cdot \frac{\sqrt{r}}{r} \rho \hat{C} \rightarrow \hat{B} \text{ (ب)}$$

$$BC^T, AC^T + AB^T - rAC \times AB \times C.s\alpha \Rightarrow f, f+1 - r(r)(1)C.s\alpha \Rightarrow C.s\alpha = \frac{f}{r}$$

$$DE^T = AD^T + AE^T - \underbrace{AD \times AE}_{A \cdot A} \cdot C \cdot s \alpha \Rightarrow DE^T = 14, 14 - \frac{9 \times 1}{12} \frac{1}{E} \Rightarrow DE = \sqrt{F}$$





$$BC^2 = AC^2 + AB^2 - 2AC \cdot AB \cdot \cos 4.$$

$$BC^2 = 16 + 49 - 2(4)(7)(\frac{1}{2}) \Rightarrow BC = 5$$

پ. ب. (الف) (7)

$$S_{ABC} = \frac{1}{2} \cdot AC \cdot AB \cdot \sin 4 = \frac{1}{2} \cdot 4 \cdot 7 \cdot \frac{\sqrt{3}}{4} = 7\sqrt{3} \quad \text{پ. ب. (ب)}$$

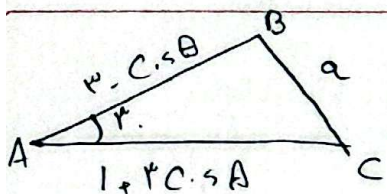
$$a^2 = b^2 + c^2 - 2bc \cos A \Rightarrow b^2 + c^2 + 2bc - a^2 = b^2 + c^2 + 2bc - b^2 - c^2 + 2bc \cos A \quad (1)$$

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

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

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

$$a^2 = b^2 + c^2 - 2bc \cos A \Rightarrow \cos A = \frac{1}{2} \quad \leftarrow \text{دایره در زمانی برقرار است}$$



$$S_{ABC} = \frac{1}{2} \cdot AB \cdot AC \cdot \sin 4 = \frac{1}{2} \cdot 14 \cdot 7 \cdot \frac{\sqrt{3}}{4} = 7\sqrt{3} \quad (1)$$

$$b^2 + AC^2 \cos 4 = c^2 \cos 4 \Rightarrow -c^2 \cos 4 + AC^2 \cos 4 = a^2 \Rightarrow \cos 4 = \frac{a^2}{AC^2 - c^2}$$

$$\Rightarrow AC = 7, AB = 7$$

$$a^2 = b^2 + c^2 - 2bc \cos A \Rightarrow 14 + 49 - 2(7)(7)(\frac{1}{2}) = 20 - 14\sqrt{3}$$