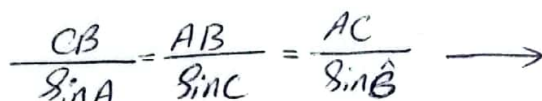

$$\frac{\frac{AC}{\sqrt{P}}}{P} = \frac{\frac{K\sqrt{P}}{\sqrt{P}}}{P} \rightarrow AC = K\sqrt{P}$$

تلفیف ۱۴

خام: ۸۰۰۰ ضایع ۱۷



$$\hat{\beta} + \hat{C} = K_0 \rightarrow K_A + \hat{C} = K_0 \rightarrow \boxed{\hat{C} = V_A} \quad \checkmark$$

جواب سوال ۱

$$(b^r - r) \frac{\text{sinc}}{\sin \beta} = (b^r - r) \frac{\frac{c}{b} \cancel{\sin \beta}}{\cancel{\sin \beta}} = bc - \frac{rc}{b} = c \longrightarrow$$

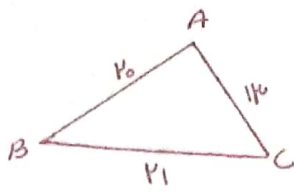
$b = 2\sqrt{\quad}$ جواب ✓
 $b = -1 \times$

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جواب سوال (۸)

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$$r_1^2 = (r_0)^2 + (r_1)^2 - 2(r_0)(r_1) \cos B$$

$$149 = r_0^2 + r_1^2 - 2r_0 r_1 \cos B$$

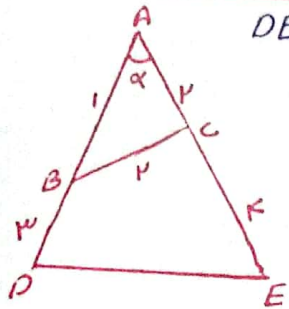
$$149 - 14r_1 = -2r_0 r_1 \cos B$$

$$-4\sqrt{r_1} = -2r_0 \cos B \rightarrow \cos B = \frac{4\sqrt{r_1}}{2r_0} = \frac{2}{r_0} \checkmark$$

$$\cos^2 B + \sin^2 B = 1 \rightarrow \frac{4}{r_0^2} + \sin^2 B = 1 \rightarrow \sin^2 B = \frac{r_0^2 - 4}{r_0^2} \rightarrow \sin B = \frac{\sqrt{r_0^2 - 4}}{r_0} \text{ زاویه حاده}$$

$$\sin \hat{B} = \frac{r_1}{r_0} \checkmark$$

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DE = ?

$$BC^2 = AB^2 + AC^2 - 2(AB)(AC) \cos \alpha$$

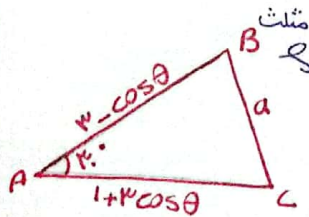
$$r^2 = 1^2 + r^2 - 2(1)(r) \cos \alpha \rightarrow -2r \cos \alpha = -1 \rightarrow \cos \alpha = \frac{1}{2r} \checkmark$$

$$DE^2 = (r)^2 + (r)^2 - 2(r)(r) \frac{1}{2r} = 2r^2 - 1r^2 \Rightarrow DE^2 = r^2$$

$$DE = r\sqrt{2} \checkmark$$

جواب سوال ۶

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$$S = \frac{1}{2} (AB)(AC) \sin \theta = r$$

$$S = \frac{1}{2} (r - \cos \theta)(1 + r \cos \theta) \times \frac{1}{r} = r$$

$$S = \frac{1}{2} (-r \cos^2 \theta + 1 \cos \theta + r) = r \rightarrow -r \cos^2 \theta + 1 \cos \theta + r = 2r \Rightarrow$$

$$(\cos - \frac{r}{r}) (\cos - r) = 0 \rightarrow \cos = \frac{r}{r} \checkmark \rightarrow \cos \theta = 1$$

$$AB = r - \frac{r}{r} = \frac{r}{r} \quad AC = 1 + r(\frac{r}{r}) = r$$

$$a^2 = 1 + \frac{r}{r} - 1r(\frac{\sqrt{r}}{r}) = \frac{1r}{r} - \sqrt{r} \rightarrow a = \sqrt{\frac{1r}{r} - \sqrt{r}}$$

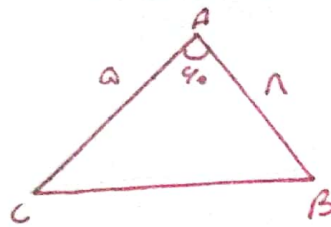
$$a = \sqrt{\frac{4r}{r} - \sqrt{r}}$$

$$a^2 = 1 + r - 1\sqrt{r} = r_0 - 1\sqrt{r}$$

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جواب سوال ٧



$$BC^2 = AC^2 + AB^2 - 2(AC)(AB)\cos 40^\circ$$

$$BC^2 = 2^2 + 1^2 - 2(2)(1)\left(\frac{1}{2}\right) \Rightarrow BC^2 = 1 \rightarrow \boxed{BC = 1}$$

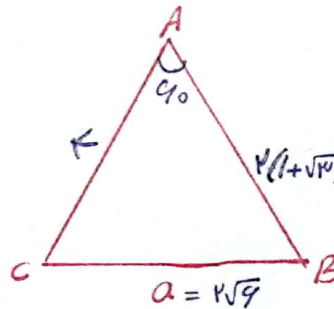
$$S_{ABC} = \frac{1}{2} (AB)(AC) \sin 40^\circ = \frac{1}{2} (2)(1) \left(\frac{\sqrt{3}}{2}\right) = \boxed{1.5}$$

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جواب سوال ٨



$$a = \sqrt{b^2 + c^2 - 2bc \cos \hat{A}} = \sqrt{1^2 + 2^2 - 2(1)(2)\cos 40^\circ}$$

$$\frac{2}{1+\sqrt{3}} a = \sqrt{2} \Rightarrow a = 2\sqrt{2}$$

$$\frac{b}{\sin B} = \frac{a}{\sin A} = \frac{c}{\sin C} \Rightarrow$$

$$\frac{1}{\sin B} = \frac{2\sqrt{2}}{\frac{\sqrt{3}}{2}} = \frac{4\sqrt{2}}{\sqrt{3}} \rightarrow \frac{1}{\sin B} = 4\sqrt{2} \rightarrow \sin B = \frac{\sqrt{2}}{4} \rightarrow \boxed{\hat{B} = 45^\circ}$$

$$\hat{A} + \hat{B} + \hat{C} = 180^\circ$$

$$\hat{A} + \hat{B} = 100^\circ \rightarrow \boxed{\hat{C} = 80^\circ}$$

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