

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

$$\hat{C} = 120^\circ - \hat{B} \rightarrow \hat{C} = 75^\circ, \hat{B} = 45^\circ$$

$$\frac{2\sqrt{2}}{\sin 45^\circ} = \frac{AC}{\frac{1}{\sqrt{2}}} \rightarrow AC = 2\sqrt{2}$$

$$\lambda = \frac{1}{\sqrt{2}} \times 2\sqrt{2} = 2$$

$$\frac{\sin C}{C} = \frac{\sin B}{B} \Rightarrow \frac{\sin C}{\sin B} = \frac{C}{B}$$

$$(b-r) \rightarrow b-r-r=0$$

$$(b-r)(b+1)=0 \begin{cases} b=-1 \text{ غلط} \\ b=r \checkmark \end{cases}$$

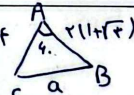
$$AC^2 = AB^2 + BC^2 - 2AB \times BC \times \cos B \rightarrow 149 = 400 + 441 - 112 \cos B$$

$$\cos B = \frac{2\sqrt{2}}{112} = \frac{1}{56} \rightarrow \sin B = \frac{r}{a}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} \Rightarrow \frac{r\sqrt{2}}{\frac{1}{\sqrt{2}}} = \frac{r}{\sin B}$$

$$\sin B = \frac{1}{\sqrt{2}} \rightarrow B = 45^\circ$$

$$\frac{a}{\sin A} = \frac{c}{\sin C} \Rightarrow \frac{r\sqrt{2}}{\frac{1}{\sqrt{2}}} = \frac{r(1+\sqrt{2})}{\sin C}$$

(ب) 

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

$$a = \sqrt{14 + 14 + 112 - 112} = \sqrt{28}$$

$$a = 2\sqrt{7}$$

$$f = 1 + f - r \times 1 \times r \times \cos \alpha \rightarrow \cos \alpha = \frac{1}{f}$$

$$1f + rf - r \times f \times r \times \frac{1}{f} \rightarrow rf + 1f - r = f.$$

$$rf = r\sqrt{1}.$$

$$S_{\Delta} = \frac{1}{2} AB \times AC \times \sin A$$

$$S_{\Delta} = \Delta \times 1 \times \frac{r}{r} \times \frac{1}{r} = 1. \sqrt{3}$$

$$\begin{aligned} BC &= \sqrt{AB^2 + AC^2 - 2AB \times AC \times \cos A} \quad \text{النسبة} \\ BC &= \sqrt{r^2 + r^2 - 2 \times r \times \frac{1}{r} \times \Delta \times 1} \\ BC &= \sqrt{49} \rightarrow BC = 7 \end{aligned}$$

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

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

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

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

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

$$r - r \cos^2 \theta - 1 \cos \theta = 1 \Rightarrow r \cos^2 \theta - 1 \cos \theta + 2 = 0 \rightarrow (r \cos \theta - 2)(\cos \theta - 1)$$

$$a^2 = f_1 + f_2 - r \times \sqrt{f_1} \times r \times f_2 \rightarrow a^2 = r - 1 \sqrt{3}$$

$$\cos \theta = \frac{2}{r} \quad \cos \theta = 1$$

$$\cos \theta = \frac{2}{r} \quad \cos \theta = 1$$