

البيان صوابي

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$$1) \left(\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} \right) \left(\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} \right) = -\frac{1}{2}$$

$$\frac{2}{2} - \frac{2}{2} = -\frac{1}{2}$$



$$2) \left(\frac{\sqrt{2}}{2} \right)^2 = \frac{2}{2} = \frac{1}{2} \times \frac{2}{2} = \frac{1}{2} = \frac{1}{2}$$

$$\frac{2}{2} \left(\frac{\sqrt{2}}{2} \right)^2 + 1 \left(\frac{\sqrt{2}}{2} \right)^2 = \frac{2}{2} = \frac{1}{2}$$

$$3) \sin 45^\circ = \frac{\sqrt{2}}{2} = \frac{AH}{\sqrt{2}} \rightarrow AH = \sqrt{2}$$



$$(2\sqrt{2})^2 = (\sqrt{2})^2 + HC^2 \rightarrow HC = 2$$

$$4) \tan 45^\circ = \frac{\sqrt{2}}{2} = \frac{x}{2} \rightarrow x = \sqrt{2}$$

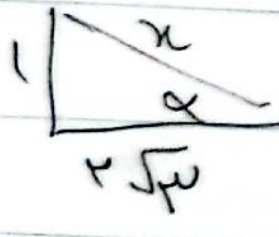
$$\frac{2\sqrt{2}}{2\sqrt{2}} = \frac{\sqrt{2}}{2} = \sin B \rightarrow B = 45^\circ$$



W. ch) $\tan \theta_0 = \frac{\Delta \cdot \sqrt{r}}{BD} = \sqrt{r} \rightarrow BD = \Delta$
 $\tan \theta_0' = \frac{\Delta \cdot \sqrt{r}}{BC} = \frac{\sqrt{r}}{r} \rightarrow BC = \Delta \cdot r \rightarrow \Delta = \frac{1}{r} \rightarrow \Delta = \frac{1}{r}$

~~$\hat{C} = \theta_0' \rightarrow \tan \theta_0' = \frac{\sqrt{r}}{BC} = \frac{1}{\sqrt{r}} \rightarrow BC = \sqrt{r}$~~
 ~~$\tan \alpha = \frac{1}{BC} = \frac{1}{\sqrt{r}} \rightarrow \cot \alpha = \sqrt{r} = \frac{1}{\sqrt{r}}$~~

i) $\hat{C} = \theta_0' \rightarrow \tan \theta_0' = \frac{\sqrt{r}}{r} = \frac{1}{\sqrt{r}} \rightarrow BC = \sqrt{r}$

 $x = 1 + \sqrt{r} \rightarrow x = \sqrt{r} \Rightarrow \sin \alpha = \frac{1}{\sqrt{r}} = \frac{\sqrt{r}}{r}$

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$$r. \frac{b}{\sin B} = \frac{a}{\sin A} = \frac{c}{\sin C} \quad \frac{AB}{\sin 10^\circ} = \frac{AC}{\sin 10^\circ}$$

$$\frac{AB}{AC} = \frac{\sin 10^\circ}{\sin 10^\circ} = r \sin 10^\circ \quad \sin 10^\circ = \sin 15^\circ \cos 40^\circ + \sin 40^\circ \cos 15^\circ$$

$$= \frac{\sqrt{2}}{2} \times \frac{1}{2} + \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{\sqrt{2} + \sqrt{4}}{2}$$

$$\rightarrow \boxed{\frac{\sqrt{2} + \sqrt{4}}{2}}$$



$$\Delta. S = \frac{1}{2} ab \sin B \quad \frac{r \times \frac{1}{2} \sin B}{\frac{1}{2} 9 \times \sin B} = \frac{r}{9}$$

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$$\rightarrow \left(\frac{5\sqrt{2} + 5\sqrt{2}}{2} \right)$$

$$\Delta. S = \frac{1}{2} ab \sin B \quad \frac{12 \times \frac{1}{2} \sin B}{\frac{1}{2} 9 \times 12 \sin B} = \frac{12}{9}$$

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$$9. S = ab \sin \alpha \quad 12 \times 5 \times \sin 120 = 12 \times \frac{5\sqrt{3}}{2} = 30\sqrt{3}$$

$$\cancel{12 \times \frac{1}{2} \times 9 \times \sin 120} \quad \text{ب) } S = \frac{ab \sin \alpha}{2} = \frac{4 \times 5\sqrt{3}}{2} = 10\sqrt{3}$$

$$\text{ج) } \frac{OQ}{PQ} = \frac{12}{25\sqrt{3}} = \frac{12\sqrt{3}}{25} \quad 14 + 5 = PQ = 19$$

$$9. \cos\left(\frac{\pi}{2} + x\right) + \sin\left(\frac{\pi}{2} - x\right) - \tan\left(\frac{\pi}{2} + x\right)$$

$$\hookrightarrow -\cos x + \cos x - (-\cot x)$$

$$+ \frac{\cos x}{\sin x}$$

$$f\left(\frac{2\pi}{4}\right) = -\sqrt{2}$$

$$10. \frac{\sin\left(\frac{11\pi}{4} + x\right) + \cos\left(\frac{12\pi}{4} - x\right)}{\cos\left(\frac{5\pi}{4} + x\right) - \sin\left(\frac{3\pi}{4} - x\right)} = -1$$

$$\frac{-\cos x + \sin x}{-\cos x + \sin x} = -1$$

$$1. y = x + \frac{\pi}{4} \rightarrow \tan \alpha = 1 \rightarrow \alpha = \frac{\pi}{4}$$

$$y = mx + b \rightarrow \alpha = \left(\frac{\pi}{4} + \frac{\pi}{4}\right) + 180^\circ \rightarrow \alpha = 135^\circ$$

$$\tan 135^\circ = -1$$

$$y = -x + b \rightarrow b = \frac{\pi}{4} \quad b_m = \frac{\pi}{4} - 1$$