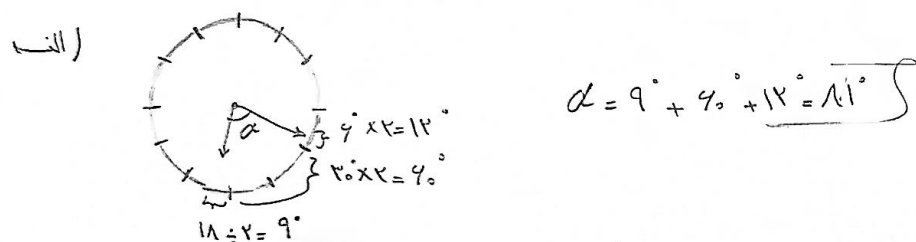


(ب) $|\overrightarrow{OA} - \overrightarrow{OB}| \rightarrow |(\overrightarrow{OA} \times \overrightarrow{OB}) - (\overrightarrow{OB} \times \overrightarrow{OA})| = 2V \leftarrow \begin{matrix} \text{زاویه بزرگتر} \\ 180^\circ \end{matrix} \quad 340^\circ - 20^\circ = 153^\circ \leftarrow \begin{matrix} \text{زاویه کوچکتر} \\ 180^\circ \end{matrix}$



(ب) $|\overrightarrow{OA} - \overrightarrow{OB}| \rightarrow |(\overrightarrow{OA} \times \overrightarrow{OB}) - (\overrightarrow{OB} \times \overrightarrow{OA})| = 2V \leftarrow \begin{matrix} \text{زاویه کوچکتر} \\ 180^\circ \end{matrix} \quad 39^\circ - 14^\circ = 25^\circ \leftarrow \begin{matrix} \text{زاویه بزرگتر} \\ 180^\circ \end{matrix}$

(الف) $S_{OBA} = \frac{\pi}{4} \times (r)^2 = \frac{\pi}{4}$

(ب) $|\overrightarrow{AB}| = \frac{\pi}{4} \times r = \frac{\pi}{4} \quad P_{OBA} = \frac{\pi}{4} + r + r = \frac{12 + \pi}{4}$

(الف) $S_{abc} = \frac{1}{2} ab \sin \alpha \rightarrow \frac{1}{2} \times 2 \times 1 \times \sin 40^\circ = 1.0 \sqrt{2}$

(ب) $a = \sqrt{c^2 + b^2 - 2cb \cos \alpha} \rightarrow \sqrt{25 + 9 - 10 \cos 40^\circ} = \sqrt{29} = 5 \quad P_{abc} = 1 + 2 + 5 = 8$

$\hat{A} + \hat{B} + \hat{C} = 180^\circ \rightarrow \hat{A} = 30^\circ$

$\frac{a}{\sin A} = \frac{b}{\sin B} \rightarrow \frac{10}{\frac{1}{2}} = \frac{10\sqrt{2}}{\sin B} \rightarrow \sin B = \frac{10\sqrt{2}}{20} = \frac{\sqrt{2}}{2} \rightarrow \hat{B} = 45^\circ = \frac{\pi}{4}$

$\hat{B} + \hat{C} = 150^\circ \rightarrow \hat{C} = 105^\circ = \frac{7\pi}{12}$

$$\frac{\tan(\pi - \alpha) + r \tan(\pi + \alpha)}{\tan(r\pi - \alpha) - \tan(r\pi + \alpha)} = \frac{-\tan \alpha + r \tan \alpha}{-\tan \alpha - \tan \alpha} = \frac{r \tan \alpha}{-r \tan \alpha} = \boxed{-1}$$

(9)

$$\tan \frac{\pi}{1r} = \alpha = 1\Delta \quad A = \frac{r \tan 1\Delta + \tan 1\Delta}{r \tan 1\Delta - \tan 1\Delta} \rightarrow \frac{r \tan(\frac{\pi}{r} - \frac{\pi}{1r}) + \tan(\frac{\pi}{r} + \frac{\pi}{1r})}{r \tan(\pi - \frac{\pi}{1r}) - \tan(\frac{r\pi}{r} - \frac{\pi}{1r})}$$

(10)

$$\rightarrow \frac{r \cot \alpha - \cot \alpha}{-r \tan \alpha - \cot \alpha} = \frac{\cot \alpha}{-r \tan \alpha - \cot \alpha}$$

?

$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = r \xrightarrow{\text{مخرج}} \frac{\frac{1 + r \sin x \cos x}{(\sin x + \cos x)^r} + \frac{1 - r \sin x \cos x}{(\sin x - \cos x)^r}}{\sin x^r - \cos x^r} = r$$

(11)

$$\xrightarrow{\text{مخرج}} \cos^r x = \cos^r x - \sin^r x \rightarrow -\cos^r x = \sin^r x - \cos^r x$$

$$\frac{r}{-\cos^r x} = r \rightarrow r = -r \cos^r x \rightarrow \cos^r x = -\frac{r}{r}$$

$$\tan^r x = \frac{\sin^r x}{\cos^r x} = \frac{1 - \cos^r x}{1 + \cos^r x} \rightarrow \tan^r x = \frac{1 - (-\frac{r}{r})}{1 + (-\frac{r}{r})} = \frac{\frac{\Delta}{r}}{\frac{1}{r}} = \boxed{\Delta}$$

$$\frac{\sin^r x - r \cos^r x + 1}{\sin^r x + r \cos^r x - 1} = \varepsilon \xrightarrow{\text{مخرج}} \frac{(1 - \cos^r x) - r \cos^r x + 1}{(1 - \cos^r x) + r \cos^r x - 1} = \frac{r - r \cos^r x}{\cos^r x} = \varepsilon$$

(12)

$$\rightarrow r - r \cos^r x = \varepsilon \cos^r x \rightarrow r = r \cos^r x \rightarrow \cos^r x = \frac{r}{r}$$

$$\tan^r x = \frac{\sin^r x}{\cos^r x} = \frac{1 - \frac{r}{r}}{\frac{r}{r}} = \boxed{\frac{\Delta}{r}}$$

الف) $\cos(2r, \Delta)$

$$2r, \Delta = \frac{\varepsilon \Delta}{r}$$

$$\cos \varepsilon \Delta = \frac{\sqrt{r}}{r}$$

$$\cos(2r, \Delta) = \sqrt{\frac{1 + \frac{\sqrt{r}}{r}}{r}} = \frac{\sqrt{r + \sqrt{r}}}{r}$$

(13)

ب) $\sin(4r, \Delta)$

$$4r, \Delta = \frac{1r \Delta}{r}$$

$$\cos 1r \Delta = -\frac{\sqrt{r}}{r}$$

$$\sin(4r, \Delta) = \sqrt{\frac{1 - (-\frac{\sqrt{r}}{r})}{r}} = \frac{\sqrt{r + \sqrt{r}}}{r}$$