

Subject.....

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$$1) \tan\left(2\pi + \frac{2\pi}{2}\right) + \sin\left(2\pi + \frac{2\pi}{2}\right) \cos\left(2\pi + \frac{\pi}{2}\right) \quad (1)$$

$$\hookrightarrow -1 + \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -1 + \frac{1}{2} = -\frac{1}{2}$$

$$2) \tan\left(2\pi + \frac{0\pi}{2}\right) \sin\left(2\pi + \frac{2\pi}{2}\right) + \cos\left(2\pi + \frac{\pi}{2}\right)$$

$$= -\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} + \frac{1}{2} = 0$$

$$\cot x = \frac{\cos x}{\sin x} = 2 \Rightarrow \sin x = \cos x \quad (2)$$

$$\frac{2\cos x - \sin x}{\cos x + \sin x} = \frac{12\sin x - \sin x}{2\sin x + \sin x} = \frac{11\sin x}{3\sin x} = \frac{11}{3}$$

$$\sin \alpha = 2\cos \alpha \rightarrow \cos \alpha, \sin \alpha < 0 \quad (3)$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \Rightarrow \cos^2 \alpha + \cos^2 \alpha = 1 \Rightarrow 2\cos^2 \alpha = 1$$

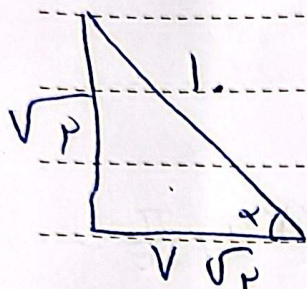
$$\Rightarrow \sqrt{\cos^2 \alpha} = \sqrt{\frac{1}{2}} \Rightarrow \cos \alpha = \pm \frac{1}{\sqrt{2}} = \frac{+\sqrt{2}}{2}$$

$$\cos \alpha = -\frac{\sqrt{2}}{2} \quad \leftarrow \text{لأنه مربع كسره}$$

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$$\text{Q.1) } \cos \frac{11\pi}{5} \times \cos \alpha - \sin \frac{11\pi}{5} \times \sin \alpha = \cos \left(\frac{11\pi}{5} + \alpha \right) \quad (P)$$



$$1^2 = r + r$$

$$r = \sqrt{r^2} = V\sqrt{r}$$

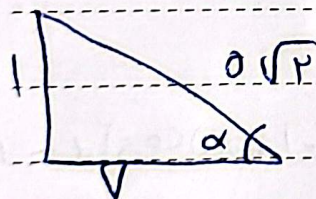
$$\cos \alpha = \frac{-V\sqrt{r}}{1}$$

$$-\frac{\sqrt{r}}{r} \times \frac{-V\sqrt{r}}{1} - \frac{\sqrt{r}}{r} \times \frac{\sqrt{r}}{1} = \frac{V}{1} - \frac{1}{1} = \frac{V}{1} - \frac{1}{1} = \frac{V-1}{1} = \frac{V-1}{1}$$

$$\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \sin \beta \cos \alpha$$

$$\cos(\alpha \pm \beta) = \cos \alpha \cos \beta \mp \sin \alpha \sin \beta$$

$$\text{Ex.1) } \sin \left(\frac{11\pi}{5} + \alpha \right) = \sin \frac{11\pi}{5} \cos \alpha + \sin \alpha \cos \frac{11\pi}{5} \quad (P)$$



$$1^2 + V^2 = r$$

$$r = \sqrt{r^2} = V\sqrt{r}$$

$$\sin \alpha = \frac{1}{\sqrt{r}} \times \frac{\sqrt{r}}{r} = \frac{\sqrt{r}}{r}$$

$$\cos \alpha = \frac{V}{\sqrt{r}} \times \frac{\sqrt{r}}{r} = \frac{V}{r}$$

$$= \frac{\sqrt{r}}{r} \times \frac{V\sqrt{r}}{1} + \frac{-\sqrt{r}}{r} \times \frac{\sqrt{r}}{1}$$

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

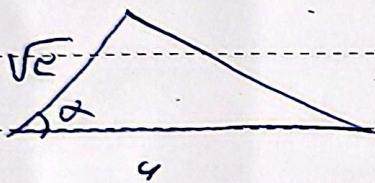
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$$\sin^2 \alpha = \frac{1}{c} \Rightarrow \cos^2 \alpha = \frac{r}{c}$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \Rightarrow \sin^2 \alpha + \sin^2 \alpha + \cos^2 \alpha = \frac{c}{r} \quad (8)$$

$$\tan^2 \alpha = \frac{\sin^2 \alpha}{\cos^2 \alpha} = \frac{\frac{1}{c}}{\frac{r}{c}} = \frac{1}{c} \times \frac{c}{r} = \frac{1}{r} \quad (9)$$



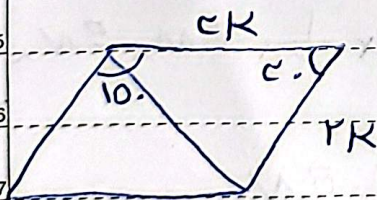
$$S = \frac{1}{r} a b \sin \alpha \quad (6)$$

$$\Sigma, \sigma = \frac{1}{r} \times r \times \sqrt{c} \times \sin \alpha \quad (10)$$

$$\Sigma, \sigma = \sqrt{c} \times \sin \alpha \rightarrow \sin \alpha = \frac{\sqrt{c}}{r}$$

$$\Rightarrow \alpha = 90^\circ \quad \text{و } 120^\circ$$

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$$S = \sigma \Sigma \quad \frac{1}{c}$$

$$r \times \frac{1}{r} \times r \times c \times \sin c^\circ = \sigma \Sigma$$

$$c r^2 = \sigma \Sigma \Rightarrow \sqrt{r^2} = \sqrt{11} \Rightarrow r = c \sqrt{r}$$

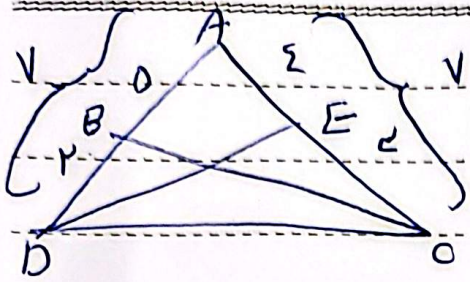
$$c \times c \sqrt{r} = 9 \sqrt{r}$$

$$r \times c \sqrt{r} = 9 \sqrt{r}$$

$$\Sigma = 10 \sqrt{r} = r(9 \sqrt{r} + 9 \sqrt{r}) = \frac{c}{10 \sqrt{r}} \quad (11)$$

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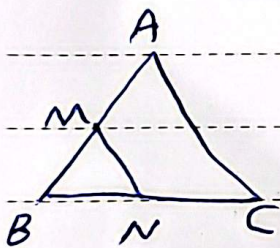
$$\sin A_{ABC} - S_{ADE} = 1/4 \quad (1)$$

$$\frac{1}{4} \times \frac{1}{2} \times \frac{1}{2} \times \sin A - \frac{1}{4} \times \frac{1}{2} \times \frac{1}{2} \times \sin A = 1/4$$

$$\frac{1}{4} (\frac{1}{2} \sin A - \frac{1}{2} \sin A) = 1/4$$

$$\sin A = \frac{1/4 \times \frac{1}{2}}{1/4 \times \frac{1}{2}} = \frac{1}{4} \Rightarrow \sin A = \frac{1}{4} = \sin 5^\circ \Rightarrow A = 5^\circ$$

$$\Rightarrow \tan 5^\circ = \frac{\sqrt{2}}{2}$$



$$\frac{1}{2} BN = \frac{1}{2} NC \rightarrow \frac{1}{2} BN = NC \quad (9)$$

$$S_{ABC} = 4 S_{BMN}$$

$$\frac{1}{2} AB \times BC \times \sin B = 4 \times \frac{1}{2} \times BM \times BN \times \sin B$$

$$BC = BN + NC \Rightarrow BC = BN + \frac{1}{2} BN = \frac{3}{2} BN$$

$$AB = AM + BM \Rightarrow \frac{3}{2} BN - BM = AM \Rightarrow AM = \frac{1}{2} BM$$

$$\frac{BM}{AM} = \frac{2}{1}$$

$$AB \times \frac{1}{2} \times \sin B = 4 \left(\frac{1}{2} \times \sin B \times \frac{1}{2} \times BM \right)$$

$$0 BM + 0 AM = 4 BM \Rightarrow 0 AM = 4 BM \Rightarrow \frac{BM}{AM} = \frac{1}{4}$$



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$$\frac{1}{|\cos \alpha|} - \frac{\cancel{\tan \alpha}}{\frac{\sin \alpha}{\cos \alpha}} = \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow \cos \alpha < 0 \quad (1)$$

مخرج مشترک

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{1}{\cancel{\cot \alpha}} \Rightarrow \sin \alpha < 0 \quad \left\{ \begin{array}{l} \text{مخرج مشترک} \\ \frac{\sin \alpha}{\cos \alpha} \end{array} \right. \quad \checkmark$$