

الف)  $1 + \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = \frac{3}{2}$  ~~ج)  $\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} + \frac{1}{2} = \frac{3}{2}$~~

0 (1)

$\cos x = k \quad \sin x = k \Rightarrow \frac{1 \times k - k}{\delta k} = \frac{11}{8} \checkmark$

(2) (2)

$\sin^2 x = \epsilon \cos^2 x \Rightarrow 1 = \delta \cos^2 x \quad \cos^2 x = \frac{1}{\delta} \Rightarrow \cos x = \frac{-1}{\sqrt{\delta}} \checkmark$

(2) (3)

$\cos(\frac{11}{8}\pi + \alpha) = \cos k \delta \cos \alpha - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -\frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -\frac{1}{2}$  ~~ج)  $\cos(\frac{11}{8}\pi + \alpha) = \cos k \delta \cos \alpha - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} = -\frac{1}{2}$~~

(1) (4)

ج)  $(\sin^2 \delta \times \cos \alpha + \sin \alpha \times \cos \delta) = \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{2} + \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{2} = -\frac{1}{2}$

$\sin^2 = \frac{1}{2} \Rightarrow \cos^2 = \frac{1}{2} \Rightarrow \tan^2 = \frac{1}{1} = 1 \checkmark$

(2) (5)

$\frac{1}{2} \times \sin x \times \sqrt{2} = \epsilon / \delta \Rightarrow \sin x = \frac{\sqrt{2}}{2} \rightarrow 45^\circ$   $\frac{1 \times 2}{2} = 1 \checkmark$

(2) (6)

$\delta \epsilon = (\frac{1}{2} \times \frac{1}{2} \times a \times b) \Rightarrow \frac{1}{4} = \frac{1}{4} \Rightarrow a = 1 \text{ و } b = 1 \Rightarrow r = \frac{1}{2}$   $p = 10 \times n = 30\sqrt{2}$

(1) (7)

$\frac{1}{2} \sin A - 1 \sin A = 1 / \sqrt{2} \rightarrow \frac{1}{2} \sin A = \frac{1}{\sqrt{2}} \rightarrow \sin A = \frac{1}{\sqrt{2}} \Rightarrow \tan A = \frac{1}{1} \checkmark$

(2) (8)

$\frac{\frac{1}{2} \times \sin x \times (BM + MA) \times \frac{\delta}{2} \times NC}{\frac{1}{2} \times \sin x \times \frac{\delta}{2} \times NC} \Rightarrow BM + MA = \frac{4}{\delta} \times NC$

0 (9)

$|\sin x| = -\sin x \quad \text{منفرد} \checkmark$

$\Rightarrow \sin x = -\sin x$

$\frac{1 - (-\sin x)}{\cos x} = \frac{1 + \sin x}{1 \cos x} \Rightarrow \cos x = |\cos x| \rightarrow \cos x = 1$

(1)

$\frac{1}{|\cos n|} - \frac{\sin n}{\cos n} = \frac{1 + \sin n}{|\cos n|} \rightarrow \frac{-\sin n}{|\cos n|} = \frac{\sin n}{\cos n} \rightarrow \cos n < 0$

$$\tan(\cancel{3\pi - \frac{\pi}{f}}) + \sin(\cancel{4\pi - \frac{\pi}{f}}) \cos(\cancel{3\pi + \frac{\pi}{f}}) = \frac{-1}{r}$$

$$-\tan \frac{\pi}{f} = -1 \quad -\sin \frac{\pi}{f} = -\frac{\sqrt{r}}{r} \quad -\cos \frac{\pi}{f} = -\frac{\sqrt{r}}{r}$$

$$\tan(\cancel{3\pi - \frac{\pi}{f}}) \sin(\cancel{4\pi - \frac{\pi}{f}}) + \cos(\cancel{3\pi + \frac{\pi}{f}}) = 0$$

$$-\tan \frac{\pi}{f} = -\frac{\sqrt{r}}{r} \quad -\sin \frac{\pi}{f} = -\frac{\sqrt{r}}{r} \quad -\cos \frac{\pi}{f} = -\frac{1}{r}$$

الف)  $\cos^2 \alpha = 1 - \sin^2 \alpha \rightarrow \cos^2 \alpha = \frac{9}{100} \xrightarrow{\text{جذر}} \cos \alpha = -\frac{\sqrt{9}}{10}$  (f)

$$\cos\left(\frac{11\pi}{f} + \alpha\right) = \cos\left(3\pi + \left(-\frac{\pi}{f} + \alpha\right)\right) = -\cos\left(\alpha - \frac{\pi}{f}\right)$$

$$= -\left(\cos \alpha \cos \frac{\pi}{f} + \sin \alpha \sin \frac{\pi}{f}\right) = -\left(-\frac{\sqrt{r}}{10} \times \frac{\sqrt{r}}{r} + \frac{\sqrt{r}}{10} \times \frac{\sqrt{r}}{r}\right) = \frac{r}{10}$$

ب)  $1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \xrightarrow{\text{جذر}} \cos \alpha = \frac{\sqrt{r}}{10} \xrightarrow{\sin^2 \alpha + \cos^2 \alpha = 1} \sin \alpha = \frac{\sqrt{r}}{10}$

$$\sin\left(\frac{13\pi}{f} + \alpha\right) = \sin\left(3\pi + \frac{\pi}{f} + \alpha\right) = -\sin\left(\frac{\pi}{f} + \alpha\right) \xrightarrow{\text{جذر}} \frac{-r}{10}$$

$$S_{ABC}^{\Delta} = \frac{1}{r} AB \times \Delta n \times \sin \hat{B}$$

$$S_{BMN}^{\Delta} = \frac{1}{r} BM \times r_n \times \sin \hat{B}$$

$$\rightarrow \frac{S_{ABC}^{\Delta}}{S_{BMN}^{\Delta}} = \frac{\Delta n \times AB}{r_n \times BM} = r$$

$$\frac{BM}{AB} = \frac{\Delta}{9} \rightarrow \frac{\cancel{BM}}{\cancel{AM} + BM} = \frac{\Delta}{9} \rightarrow \frac{BM}{AM} = \boxed{\frac{\Delta}{r}}$$