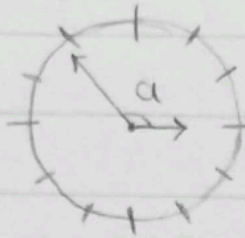


مسألة ثالث : ١٩

مثال

أطوال

١' : ٥٤'



١' : ٥٤' (الف) $a = 10,0m - ٣,٥h$

(ب) $a = 10,0m - ٣,٥h$

$$a = 10,0m - ٣,٥h = ٢,٥$$

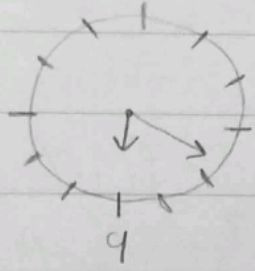
$$٣٩ - ٢,٥ = ١٥٣'$$

$$\frac{٥٤}{٢} = ٢٧$$

$$٣٠ - (٢ \times ٢٧) = ٦ \quad ١٢ + ٦ + ٢٧ = ١٥٣'$$

$$٢ \times ١' = ١٢$$

٩ : ١١'



(الف) $a = 10,0m - ٣,٥h$

(ب) $a = 10,0m - ٣,٥h$

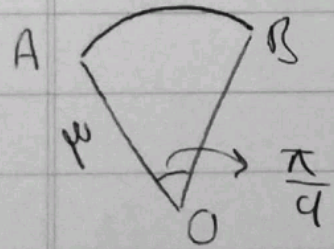
$$a = 10,0m - ٣,٥h = ١١'$$

$$\frac{١١}{٢} = ٥,٥$$

$$٢ \times ٥,٥ = ١١$$

$$٩ + ٩ + ١٢ = ٣٠$$

$$٣٠ - (٣ \times ٩) = ١٢$$



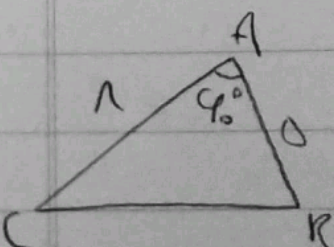
$$S_{OAB} = \frac{a}{2} R^2 = \frac{\pi}{12} \times 9 = \frac{3\pi}{4}$$

(الف)

$$P_{OAB} = 2R + \widehat{AB} = 2 \times 3 + \frac{\pi}{2} = 4 + \frac{\pi}{2}$$

(ب)

$$\widehat{AB} = aR = 3 \times \frac{\pi}{4} = \frac{\pi}{2}$$



$$S_{ABC} = \frac{1}{2} ab \sin A = \frac{1}{2} \times 1 \times 1 \times \sin 90^\circ = \frac{1}{2}$$

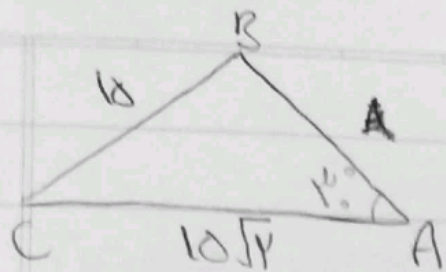
$$P_{ABC} = AB + BC + AC = 1 + 1 + 1 = 3$$

(ب)

$$BC' = a^2 + b^2 - 2ab \cos A$$

$$BC' = 1 + 1 - 2 \times 1 \times 1 \times \frac{1}{2} = 1 \Rightarrow BC = 1$$

OLand



$$\hat{B} + \hat{C} = 10^\circ \Rightarrow \hat{A} = 110^\circ - 10^\circ = 100^\circ$$

(1)

$$\frac{a}{\sin A} = \frac{b}{\sin B} \Rightarrow \frac{10}{\frac{1}{2}} = \frac{10\sqrt{2}}{\sin B}$$

$$\hat{C} = \frac{10}{110} \pi = \frac{\pi}{11}$$

$$\sin B = \frac{\sqrt{2}}{2}$$

$$B = 45^\circ \Rightarrow B + C = 10^\circ$$

$$C = 10^\circ$$

$$\hat{A} = \frac{100}{110} \pi = \frac{10\pi}{11}$$

$$\frac{\tan(\pi - \alpha) + \gamma \tan(\pi + \alpha)}{\tan(\gamma\pi - \alpha) - \tan(\gamma\pi + \alpha)} = \frac{-\tan \alpha + \gamma \tan \alpha}{-\tan \alpha - \tan \alpha} = \frac{\gamma \tan \alpha}{-2 \tan \alpha} = -\frac{\gamma}{2} \quad (4)$$

$$A = \gamma \tan 10^\circ + \tan 10^\circ = \gamma \tan(\frac{\pi}{11} - 10^\circ) + \tan(\frac{\pi}{11} + 10^\circ) \quad (V)$$

$$\gamma \tan 10^\circ - \tan 10^\circ = \gamma \tan(\pi - 10^\circ) - \tan(\frac{10\pi}{11} - 10^\circ)$$

$$\frac{\gamma \cot 10^\circ - \cot 10^\circ}{-\gamma \tan 10^\circ - \cot 10^\circ} = \frac{\cot 10^\circ}{-\gamma \tan 10^\circ - \cot 10^\circ} = \frac{\frac{1}{a}}{-\gamma a - \frac{1}{a}} = \frac{\frac{1}{a}}{\frac{-\gamma a^2 - 1}{a}} = \frac{-1}{\gamma a^2 + 1}$$

$$\tan \frac{\pi}{11} = \tan 10^\circ = a \Rightarrow$$

$$\cot 10^\circ = \frac{1}{a}$$

$$\frac{\pi}{11} \times \frac{110}{\pi} = 10^\circ$$

$$\frac{\sin x + \cos x}{\sin x - \cos x} + \frac{\sin x - \cos x}{\sin x + \cos x} = \gamma \quad (1)$$

$$\cos^2 x = 1 - \sin^2 x$$

$$\frac{\sin^2 x + \cos^2 x + \sin x \cos x + \sin x \cos x - \sin x \cos x}{\sin^2 x - \cos^2 x} = \frac{\gamma}{\sin^2 x - \cos^2 x} = \gamma$$

$$\tan^2 x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{0}{4}}{\frac{1}{4}} = 0$$

$$\frac{\gamma}{\gamma \sin^2 x - 1} = \gamma$$

$$\gamma \sin^2 x = 1$$

$$\sin^2 x = \frac{1}{\gamma} \Rightarrow \cos^2 x = \frac{1}{\gamma}$$

$$\cos^2 x = 1 - \sin^2 x$$

$$\frac{\sin^2 x - r \cos^2 x + 1}{\sin^2 x + r \cos^2 x - 1} = r$$

(9)

$$\sin^2 x + r \cos^2 x - 1$$

$$\cos^2 x = 1 - \sin^2 x$$

$$\frac{\sin^2 x - r + r \sin^2 x + 1}{\sin^2 x + r - r \sin^2 x - 1} = r$$

$$\sin^2 x + r - r \sin^2 x - 1$$

$$r \sin^2 x - 1 = -r \sin^2 x + r$$

$$\tan x = \frac{\sin^2 x}{\cos^2 x} = \frac{\frac{0}{r}}{\frac{1}{r}} = \frac{0}{1} = 0$$

$$r \sin^2 x = 0$$

$$\sin^2 x = \frac{0}{r} \Rightarrow \cos^2 x = \frac{r}{r}$$

$$\cos^2 x = 1 - \sin^2 x$$

$$a) \cos(4\pi, 0) \cos^2 4\pi, 0 = \frac{1 + \cos 4\pi}{2} = \frac{r + \sqrt{r}}{r} = \frac{r + \sqrt{r}}{r}$$

(10)

$$\cos(4\pi, 0) = \frac{1 + \sqrt{r + \sqrt{r}}}{2} = \frac{\sqrt{r + \sqrt{r}}}{2}$$

$$b) \sin(4\pi, 0) \sin^2 4\pi, 0 = \frac{1 - \cos 4\pi}{2} = \frac{r + \sqrt{r}}{r} = \frac{r + \sqrt{r}}{r}$$

$$\sin(4\pi, 0) = \frac{1}{2} \frac{\sqrt{r + \sqrt{r}}}{r} = \frac{\sqrt{r + \sqrt{r}}}{2r}$$