

12 Circle

وارضی A

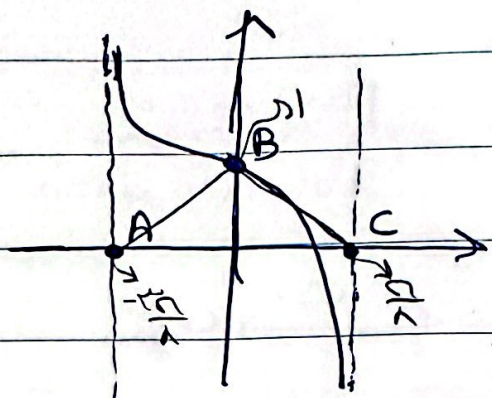
مریم کوکلی

ABC Circle

$$y = \tan\left(-\frac{2\pi}{\epsilon} + \frac{\pi}{\epsilon}\right)$$

Lo

(1 سوال)



$$B \Rightarrow \eta = 0 \rightarrow \tan\left(\frac{\pi}{\epsilon}\right) = 1 \rightarrow \underline{B = (0, 1)}$$

$$A, C \rightarrow \tan\left(-\frac{2\pi}{\epsilon} + \frac{\pi}{\epsilon}\right) = 0$$

$$\rightarrow \tan\left(-\frac{2\pi}{\epsilon} + \frac{\pi}{\epsilon}\right) = \tan(\pi) \Rightarrow -\frac{2\pi}{\epsilon} = \frac{\pi}{\epsilon}$$

$$\Rightarrow \eta = -\frac{\pi}{\lambda} \Rightarrow A = \left(-\frac{\sqrt{7}}{\lambda}, 0\right)$$

$$\rightarrow \tan\left(-\frac{2\pi}{\epsilon} + \frac{\pi}{\epsilon}\right) = \tan(0) \rightarrow -\frac{2\pi}{\epsilon} = -\frac{\pi}{\epsilon} \rightarrow \eta = +\frac{\pi}{\lambda}$$

$$\Rightarrow \underline{C = \left(+\frac{\pi}{\lambda}, 0\right)}$$

P ✓

$$S_{ABC} = \frac{1 \times \frac{\pi}{\lambda}}{2} = \boxed{\frac{\pi}{\epsilon}}$$

$$\eta^2 - (\sin \alpha) \eta - \frac{1}{\epsilon} \cos^2 \alpha = 0$$

(2 سوال)

$$\eta = \frac{\pi}{\epsilon} \rightarrow \frac{\pi}{\epsilon} - \frac{\pi}{\epsilon} (\sin \alpha) - \frac{1}{\epsilon} (1 - \sin^2 \alpha) = 0$$

$$\times \epsilon \rightarrow 14 - \pi \sin \alpha - 9(1 - \sin^2 \alpha) = 0 \Rightarrow 9 \sin^2 \alpha - \pi \sin \alpha + 5 = 0$$

$$\Rightarrow \sin \alpha = \frac{\pi \pm 11}{18} \rightarrow \sin \alpha = \frac{\pi}{18} \text{ قوی}$$

$$\sin \alpha = \frac{1}{9} \text{ قوی} \quad \sin^2 \alpha + \cos^2 \alpha = 1 \Rightarrow \cos^2 \alpha = \frac{80}{81}$$

$$\Rightarrow \cos \alpha = \frac{\sqrt{80}}{9}$$

P ✓

$$1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \rightarrow 1 + \tan^2 \alpha = \frac{1}{\frac{80}{81}} \rightarrow \boxed{\frac{9}{\lambda}}$$

$$\log(+\sin \alpha) - \log(-\cos \alpha) = \log 3 \quad \sin \alpha - \cos \alpha = ? \quad (\text{سوال ۳})$$

$$\Rightarrow \log \frac{-\sin \alpha}{\cos \alpha} = \log 3 \rightarrow -\tan \alpha = 3 \rightarrow \tan \alpha = -3$$

$$1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \rightarrow 1 + 9 = \frac{1}{\cos^2 \alpha} \rightarrow \cos^2 \alpha = \frac{1}{10} \rightarrow \cos \alpha = \pm \frac{\sqrt{10}}{10}$$

$$\cos \alpha = -\frac{\sqrt{10}}{10} \quad (\text{چون در } (3) \text{ هم } -\cos \alpha \text{ داریم})$$

و $\sin \alpha$ مثبت است

$$\sin^2 \alpha + \cos^2 \alpha = 1 \rightarrow \sin^2 \alpha = 1 - \frac{1}{10} \Rightarrow \sin^2 \alpha = \frac{9}{10} \rightarrow \sin \alpha = \pm \frac{3\sqrt{10}}{10}$$

$$\sin \alpha - \cos \alpha = \frac{3\sqrt{10}}{10} - \left(-\frac{\sqrt{10}}{10}\right) = \frac{4\sqrt{10}}{10} = \boxed{\frac{2\sqrt{10}}{5}}$$

$$\sin^2 \theta + \cos^2 \theta = \frac{5}{2} \quad \cos^2 \theta + \sin^2 \theta = ? \quad (\text{سوال ۴})$$

$$\hookrightarrow \sin^2 \theta + 1 - \sin^2 \theta = \frac{5}{2} \rightarrow \sin^2 \theta (\sin^2 \theta - 1) = -\frac{1}{2}$$

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

$$\cos^2 \theta + \sin^2 \theta \rightarrow \cos^2 \theta + 1 - \cos^2 \theta \rightarrow \cos^2 \theta (\cos^2 \theta - 1) + 1 = \frac{5}{2}$$

$$\underbrace{\cos^2 \theta (\cos^2 \theta - 1)}_{-\sin^2 \theta \cos^2 \theta} + 1 = \frac{5}{2}$$

$$\underbrace{-\sin^2 \theta \cos^2 \theta}_{-\frac{1}{2}} + 1 = \frac{5}{2}$$

$$r \sin \alpha + \sin \alpha \cos \alpha$$

$$r - r \cos^2 \alpha$$

$$r(1 - \cos^2 \alpha) = r \sin^2 \alpha$$

$$\sin \alpha \tan \alpha - \frac{1}{\cos \alpha} >$$

(سوال ۵)

کمتر است

$$\hookrightarrow \frac{\sin(r + \cos \alpha)}{r \sin^2 \alpha}$$

$$\frac{r + \cos \alpha}{r \sin \alpha}$$

$$\Rightarrow \sin \alpha <$$

آپادانا

* اولی در سینه جا

$$\sin \theta \tan \theta - \frac{1}{\cos \theta} > 0 \rightarrow \frac{\sin^2 \theta - 1}{\cos \theta} > 0 \Rightarrow -\frac{\cos^2 \theta}{\cos \theta} > 0$$

$$\Rightarrow -\cos \theta > 0 \Rightarrow \cos \theta < 0$$

periodic function sine و cosine

$$\frac{1}{\sin \theta} + \frac{1}{\cos \theta} = 0 \quad \tan \theta + \cot \theta = ?$$

(9 سوال)

$$\rightarrow \frac{1 \cos \theta + 1 \sin \theta}{\sin \theta \cos \theta} = 0 \rightarrow 1 \cos \theta = -1 \sin \theta \Rightarrow \cos \theta = -\frac{1}{1} \sin \theta$$

$$\sin^2 \theta + \cos^2 \theta = 1 \Rightarrow \sin^2 \theta + \frac{1}{4} \sin^2 \theta = 1 \Rightarrow \frac{5}{4} \sin^2 \theta = 1$$

$$\Rightarrow \sin \theta = \pm \frac{\sqrt{4}}{\sqrt{5}} \quad \cos \theta = \pm \frac{\sqrt{1}}{\sqrt{5}} \rightarrow \text{Cotangent و Sine}$$

نتیجہ درجہ میں (فرق نہیں کہہ سکتے ہیں کہ وہ درجہ میں ہے یا نہیں) (2 سوال)

$$\tan \theta + \cot \theta \rightarrow \frac{\sin^2 \theta + \cos^2 \theta}{\sin \theta \cos \theta} \rightarrow \frac{1}{\frac{\sqrt{4}}{\sqrt{5}} \times (-\frac{\sqrt{1}}{\sqrt{5}})} = \frac{1}{-\frac{4}{5}}$$

$$\Rightarrow \tan \theta + \cot \theta = \boxed{-\frac{5}{4}}$$

$$\frac{\sqrt{1 + \sin 2\theta}}{\sin 2\theta + \sin 1\theta} = ?$$

(10 سوال)

$$\sin 2\theta + \sin 1\theta \quad 1 + \sin 2\theta \rightarrow \sin^2 \theta + \cos^2 \theta + 1 \sin 2\theta$$

$$\Rightarrow (\sin^2 \theta + \cos^2 \theta)^2 \rightarrow \sin^2 \theta + \cos^2 \theta$$

$$\sin \alpha + \cos \alpha = \sqrt{2} \sin(\alpha + \frac{\pi}{4}) \rightarrow \sin^2 \alpha + \cos^2 \alpha = \sqrt{2} \sin \alpha = \sqrt{2} \cos \alpha$$

$$\sin 2\theta + \sin 1\theta \rightarrow \sin(\theta + \theta) + \sin(\theta - \theta) \quad \text{یا } \sin \theta \cos \theta + \cos \theta \sin \theta$$

$$\Rightarrow \frac{\sin^2 \theta_0 \cos \theta_0}{\frac{1}{r} \cos \theta_0} + \frac{\sin^2 \theta_0 \cos \theta_0}{\frac{1}{r} \cos \theta_0} - \sin^2 \theta_0 \cos \theta_0 = \cos \theta_0$$

$$\Rightarrow \frac{\sqrt{r} \cos \theta_0}{\cos \theta_0} = \boxed{\sqrt{r}} \quad \text{✓}$$

$$(1 - r \sin^2 \alpha) (r \cos^2 \alpha - 1) \left(\frac{1 - \tan^2 r}{1 + \tan^2 r} \right) \quad \text{(1 سوال)}$$

$$\frac{1 - \tan^2 r}{1 + \tan^2 r} = \cos 2\alpha \Rightarrow \frac{1 - \tan^2 r}{1 + \tan^2 r} = \cos 2\alpha$$

$$\rightarrow (\cos^2 \alpha - \sin^2 \alpha) (\cos^2 \alpha - \sin^2 \alpha) (\cos 2\alpha) = (\cos^2 \alpha) (\cos^2 \alpha) (\cos 2\alpha)$$

$$\times \sin 1. \rightarrow \frac{(\sin^2 \alpha \cos^2 \alpha) (\cos 2\alpha) (\cos 2\alpha)}{\frac{1}{r} \sin^2 \alpha} \rightarrow \frac{\frac{1}{r} \frac{\cos^2 \alpha}{\sin^2 \alpha}}{\sin 1.} = \boxed{\frac{1}{r} \cot^2 \alpha}$$

$$\sin \alpha + r \cos \alpha = r \quad \alpha \cos^2 \alpha - 1 r \cos \alpha = s \quad \text{(9 سوال)}$$

$$\cos^2 \alpha = r \cos^2 \alpha - 1 \quad \rightarrow 1 \cos^2 \alpha - \alpha - 1 r \cos \alpha = s$$

$$\rightarrow \sin \alpha = r - r \cos \alpha \rightarrow \sin^2 \alpha + \cos^2 \alpha = 1 \rightarrow (r - r \cos \alpha)^2 + \cos^2 \alpha = 1$$

$$\rightarrow 4 \cos^2 \alpha - 4 r \cos \alpha + r^2 + \cos^2 \alpha = 1 \rightarrow 1 \cos^2 \alpha - 4 r \cos \alpha + r^2 = 1$$

$$\rightarrow 1 \cos^2 \alpha - 4 r \cos \alpha = -r^2 \rightarrow 1 \cos^2 \alpha - 4 r \cos \alpha - \alpha = -r^2 - \alpha = \boxed{-1}$$

✓

Subject:

Year:

Month:

Date:

$$\sin \hat{B} \sin \hat{C} = \cos \frac{\hat{A}}{r} \quad \hat{B} = 71^\circ \quad \hat{A} = ? \quad (10/10)$$

$$\cos \frac{\hat{A}}{r} = \frac{1 + \cos \hat{A}}{r} \rightarrow \cos \hat{A} = \cos (180 - (B+C)) = -\cos (B+C)$$

$$\Rightarrow 1 - \cos (B+C) = r \sin B \sin C \rightarrow 1 - (\cos B \cos C - \sin B \sin C) =$$

$$\Rightarrow 1 - \cos B \cos C + \sin B \sin C = r \sin B \sin C$$

$$\Rightarrow 1 - (\cos B \cos C + \sin B \sin C) = 0 \Rightarrow 1 - \cos (B-C) = 0$$

$$\Rightarrow \cos (B-C) = 1 \Rightarrow B-C = 0 \Rightarrow \hat{B} = \hat{C} = 71^\circ$$

$$A = 180 - (B+C) \rightarrow \hat{A} = 180 - (142) = \boxed{38^\circ}$$