

SUBJECT: MATH EXAM 2nd Annual 20 22 CLASS: Inter P-I

GROUP: I DATE: 21-12-22

(GENERAL INSTRUCTIONS FOR MARKING KEY)

(v) L.H.S

$$\cos(\alpha + \beta) \cos(\alpha - \beta)$$

$$= [\cos \alpha \cos \beta - \sin \alpha \sin \beta] [\cos \alpha \cos \beta + \sin \alpha \sin \beta]$$

$$= \cos^2 \alpha \cos^2 \beta - \sin^2 \alpha \sin^2 \beta \quad (1M)$$

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

$$= \cos^2 \beta - \sin^2 \alpha = R.H.S \quad (1M)$$

(vi) $1 + \tan \alpha \tan \alpha$

$$= 1 + \frac{\sin \alpha}{\cos \alpha} \frac{\sin \alpha}{\cos \alpha}$$

$$= 1 + \frac{2 \sin^2 \alpha}{\cos 2\alpha} \quad (1M)$$

$$= \frac{\cos^2 \alpha + \sin^2 \alpha}{\cos 2\alpha}$$

$$= \frac{1}{\cos 2\alpha} \because \cos^2 \alpha + \sin^2 \alpha = 1$$

$$= \sec 2\alpha$$

$$= R.H.S \quad (1M)$$

$$= R.H.S$$

(vii) Let p be the period

of $\sin x$

$$\sin(x + p) = \sin x$$

put $x = 0$

$$\sin p = 0$$

$$p = 0, \pm \pi, \pm 2\pi, \dots$$

of $p = \pi$

$$\sin(x + \pi) = -\sin x$$

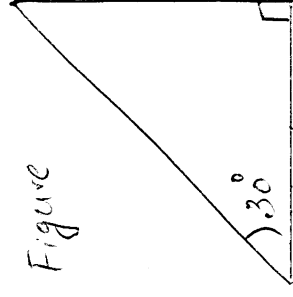
π is not period of $\sin x$ (1M)

$$p = 2\pi$$

$$\sin(x + 2\pi) = \sin x$$

Hence 2π is period of $\sin x$ (1M)

(viii) Figure



Let Height of pole = h

length of shadow = $40m$

$$\tan 30^\circ = \frac{h}{40}$$

$$\frac{1}{\sqrt{3}} = \frac{h}{40} \Rightarrow h = \frac{40}{\sqrt{3}} m \quad (1M)$$

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RE-CHECKED BY تم درج بالا سوال پر چ (انتخابی و عمومی) اور ریاضیات کے حوالے سے مکمل طور پر تفسیری کر لی ہے۔ کسی قسم کی کوئی غلطی نہیں ہے۔

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