



(6)  $\sqrt{1110} \text{ M}$   $\sqrt{1110}$   $\Delta AMB$

$$\cos \theta = \frac{AM}{AB} \rightarrow AM = 2a \cos \theta$$

$$\frac{AO}{AL} = \cos \theta \rightarrow AL = \frac{a}{\cos \theta} \quad \Delta OAL$$

$$ML = AM - AL = 2a \cos \theta - \frac{a}{\cos \theta}$$

(S.S)  $\Delta MHL \sim \Delta ALO$

$$\frac{AL}{ML} = \frac{AO}{MH}$$

$$\frac{\frac{a}{\cos \theta}}{2a \cos \theta - \frac{a}{\cos \theta}} = \frac{a}{x}$$

$$\frac{\frac{a}{\cos \theta}}{a(2 \cos^2 \theta - 1)} = \frac{a}{x} \rightarrow \boxed{x = a(2 \cos^2 \theta - 1) = a \cos 2\theta}$$

$\Delta AOL$ :  $OL = a \tan \theta$  (2)

$\Delta MHL$ :  $ML = x \tan \theta = a \cos 2\theta \tan \theta$

$$S_{\text{HOBM}} = \frac{HO(MH + BO)}{2} = \frac{(OL + HL)(MH + BO)}{2} = \frac{(a \tan \theta + a \cos 2\theta \tan \theta)(MH + BO)}{2}$$

$$= \frac{\tan \theta (a + a \cos 2\theta)(a \cos 2\theta + a)}{2} = \frac{a^2 \tan \theta (1 + \cos 2\theta)^2}{2} = \frac{a^2 \tan \theta (2 \cos^2 \theta)^2}{2}$$

$$= 2a^2 \tan \theta \cos^4 \theta$$

$\theta$   $\sqrt{1110}$

$$S' = \frac{2a^2}{\cos^2 \theta} \cos^4 \theta - 4(a^2 \theta \sin \theta) \cdot 2a^2 \tan \theta = 2a^2 \cos^2 \theta - 8a^2 \cos^2 \theta \sin^2 \theta$$

$$= 2a^2 \cos^2 \theta (1 - 4 \sin^2 \theta)$$

$$\sin \theta = \pm \frac{1}{2}$$

$$\cos \theta = 0$$

$\sqrt{1110}$   $\sqrt{1110}$

$$\sin \theta = \frac{1}{2}$$

$$\sin \theta = -\frac{1}{2}$$

$$\theta = \frac{\pi}{2}$$

$$\theta = 30^\circ$$

$$\theta = 150^\circ$$

$\pi < \theta$   
 $\sqrt{1110}$   $\sqrt{1110}$

( $\sqrt{1110}$   $\sqrt{1110}$ )

$\sqrt{1110}$   $\sqrt{1110}$