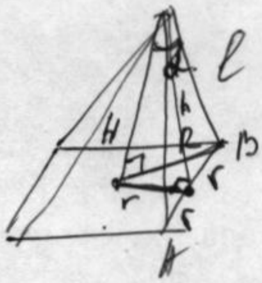


$S_{бок} = \cancel{S_{осн} + S}$

по т. Пифагора

$R = l\sin\alpha \Rightarrow H^2 = l^2 - R^2 = l^2 - l^2\sin^2\alpha = l^2(1-\sin^2\alpha) = l^2\cos^2\alpha$

$r = R\dfrac{\sqrt{2}}{2} = \dfrac{\sqrt{2}\, l\sin\alpha}{2}$ — для квадрата

$AB = 2r = \sqrt{2}\cdot l\sin\alpha$

по т. Пифагора

апофема $h^2 = H^2 + r^2 = l^2\cos^2\alpha + \dfrac{l^2\sin^2\alpha}{2} =$

$= \dfrac{2l^2\cos^2\alpha + l^2\sin^2\alpha}{2} = \dfrac{l^2(2\cos^2\alpha + \sin^2\alpha)}{2} =$

$\dfrac{l^2(2\cos^2\alpha + 1 - \cos^2\alpha)}{2} = \dfrac{l^2(1+\cos^2\alpha)}{2}$

$S_{\Delta грани} = \dfrac{1}{2} H\cdot AB = \dfrac{1\cdot l\sqrt{1+\cos^2\alpha}\cdot\sqrt{2}\, l\sin\alpha}{2\cdot\sqrt{2}} =$

$= \dfrac{l^2}{2}\cdot\sin\alpha\cdot\sqrt{1+\cos^2\alpha}$

$S_{бок} = 4\cdot S_{грани} = 2l^2\cdot\sin\alpha\cdot\sqrt{1+\cos^2\alpha}$