



$OH = OS$  (both radii)  $\Rightarrow \angle OSH = \angle OHS = \alpha$ , say  
 $OH = OB$  (" " )  $\Rightarrow \angle OHB = \angle OBH = \beta$ , say

let  $\angle SOB = \phi$ . Then

$$\phi = 2\pi - \angle SOH - \angle OHB$$

$$= 2\pi - \{\pi - 2\alpha\} - \{\pi - 2\beta\}$$

$$= 2\pi - \pi + 2\alpha - \pi + 2\beta$$

$$= 2(\alpha + \beta)$$

sum of  $\angle$ s  
of  $\Delta = \pi$

So if  $\alpha + \beta = \theta$  then  $\phi = 2\theta$ .