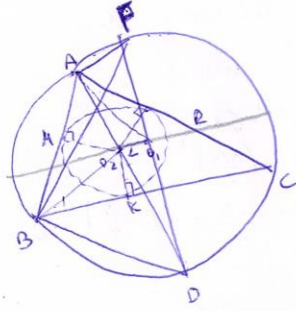


1.108  
6



(b.s)  $\triangle ABE \sim \triangle DEC$   
 $\downarrow$   
 $AE \cdot EC = BE \cdot DE$   
 (MA)  $\cdot$   $\cdot$

$\angle CAD = \alpha$   
 (OC  $\perp$   $AD$ )  $\angle CAD = \angle CBD = \alpha$   
 (לומר  $\angle$   $MAO_2$   $\angle$   $MAO_2$ )  $\angle MAO_2 = \angle MAO_2 = \alpha$   
 $90 - \alpha = \angle MAO_2 \iff \angle MAO_2 = \alpha$   
 (לומר  $\angle$   $BO_2$ )  $\angle ABO_2 = \angle O_2BC = \beta$   
 $\angle MO_2B = 90 - \beta$

$180 = \angle O_2 = \angle MAO_2 + \angle MOK + \angle KLO$   
 $180 = 90 - \alpha + \angle MO_2B + \angle BO_2D$   
 $90 + \alpha = 90 - \beta + \angle BO_2D$   
 $\angle BO_2D = \alpha + \beta$   
 $\angle O_2BD = \angle O_2BC + \angle CBD = \alpha + \beta$

$\frac{AO_2}{FD} = \frac{MO_2}{BD}$   
 $AO_2 \cdot BD = MO_2 \cdot FD$   
 $AO_2 \cdot O_2D = r \cdot 2r$

$\triangle AO_2M \sim \triangle FBD$   
 דומים

$\angle FBD = 90^\circ \iff \angle FAD = \angle FAD = \angle MAO_2$   
 (BD  $\perp$   $AD$ )  $\angle MAO_2 = \angle BFD$   
 $AO_2 \cdot O_2D = (r+L)(r-L)$   
 $r \cdot 2r = r^2 - L^2$   
 $L = \sqrt{r^2 - 2r^2}$

$\downarrow$

$0 \leq r^2 - 2r^2$   
 $0 \leq r(r - 2r)$   
 $\downarrow$   
 $r - 2r \geq 0$   
 $r \geq 2r$

כל  $0 \leq 2$   $\rightarrow$

לכן  $r \geq 2r$   $\rightarrow$   $r \geq 2r$