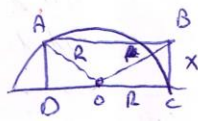


2.52  
4



$\triangle AOD$   
 $DO = \sqrt{AO^2 - AD^2}$   
 $DO = \sqrt{R^2 - x^2}$

$AB = DO + OC = R + \sqrt{R^2 - x^2}$

ⓐ

$f = f_{\text{pr}} = 2(\underbrace{R + \sqrt{R^2 - x^2}}_{AB} + \underbrace{x}_{BC}) = 2R + 2\sqrt{R^2 - x^2} + 2x$

$f' = \frac{-2 \cdot 2x}{2\sqrt{R^2 - x^2}} + 2 = 0 \rightarrow 4(R^2 - x^2) = 4x^2$

$4R^2 = 8x^2$

$x = \frac{R}{\sqrt{2}}$

$\frac{R}{2}$	$\frac{R}{\sqrt{2}}$	$\frac{R}{\sqrt{2}}$
+	0	-
↑ max		↓

ⓑ

$S = AB \cdot BC = x(R + \sqrt{R^2 - x^2})$

$S' = R + \sqrt{R^2 - x^2} - \frac{x^2}{\sqrt{R^2 - x^2}} = 0$

$0 = R + \frac{R^2 - x^2 - x^2}{\sqrt{R^2 - x^2}} = R + \frac{R^2 - 2x^2}{\sqrt{R^2 - x^2}}$

$R\sqrt{R^2 - x^2} = 2x^2 - R^2 \quad |(\cdot)^2$

$R^2(R^2 - x^2) = 4x^4 - 4x^2R^2 + R^4$

$0 = 4x^4 - 3x^2R^2$

$0 = \frac{4}{3}x^2(4x^2 - 3R^2)$

$x = \sqrt{\frac{3}{4}}R$

$x = \frac{\sqrt{3}}{2}R$

$\frac{R}{2}$	$\frac{\sqrt{3}}{2}R$	$\frac{R}{2}$
+	0	+
↑ max		↓

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