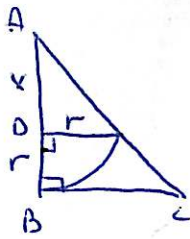


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(676)



AD = x    מה נוא  
היבטון    מה נוא

$$\frac{x}{x+r} = \frac{r}{BC}$$

$$BC = \frac{(x+r)r}{x} = \frac{xr+r^2}{x}$$

$$f = AB + BC = x+r + \frac{xr+r^2}{x} = x+r+r+\frac{r^2}{x} = x+2r+\frac{r^2}{x}$$

$$f' = 1 - \frac{r^2}{x^2} = 0 \Rightarrow x = \pm r \rightarrow x = r$$

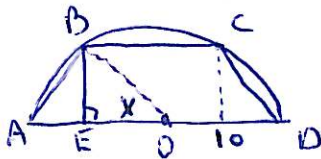
(היבטון מה נוא)

x	$\frac{1}{2}r$	r	$1\frac{1}{2}r$
y'	-		+
y	→	min	→

$$AB = x+r = 2r$$

$$BC = \frac{xr+r^2}{x} = \frac{r^2+r^2}{r} = \frac{2r^2}{r} = 2r$$

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(678)



$$AE = AO - EO = 10 - x$$

$$BE = x \cdot 2 = 2x$$

$$BE^2 = BO^2 - EO^2 = 10^2 - x^2$$

ΔBEO

$$f = S_{ABCD} = \frac{(AD+BC)BE}{2} = \frac{(20+2x)\sqrt{100-x^2}}{2}$$

$$f' = \frac{1}{2} \left[ 2\sqrt{100-x^2} + \frac{(20+2x)}{2\sqrt{100-x^2}} \cdot (-2x) \right] = 0$$

(היבטון מה נוא)

$$2\sqrt{100-x^2} - \frac{20x+2x^2}{\sqrt{100-x^2}} = 0 \quad / \sqrt{100-x^2}$$

$$2(100-x^2) - 20x - 2x^2 = 0$$

$$-4x^2 - 20x + 200 = 0$$

$$x_1 = -10 \quad x_2 = 5$$

x	4	5	6
y'	+		-
y	→	max	↘