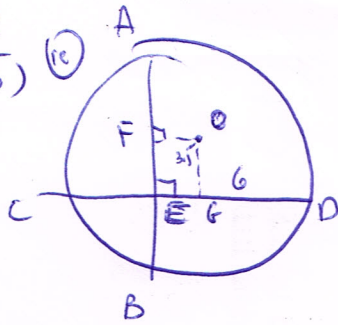


17  
(320)



סעיף התנאים (הנני)  
FOGE 1 > 1/2

המרכז O של המעגל  
AB = √ המעגל (המקור)  
O, E = AF = FB 1/2  
OG = OE = 3.5 (1 > 1/2)

$$AE = AF + FE = 8.5 + 3.5 = 9$$
$$EB = 2$$

$$AE \cdot BE = CE \cdot ED \quad (\text{המשפט 2 של תורת המעגלים})$$

$$9 \cdot 2 = 6 \cdot CE$$

$$\boxed{CE = 3}$$

$$CD = CE + ED = 3 + 6 = 9$$

2) CD = המעגל (המקור) של המעגל  
OE 1/2

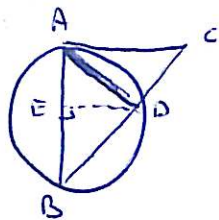
$$CG = GD = 4.5$$

$$EG = CG - CE = 4.5 - 3 = 1.5$$

$$FO = EO = 1.5$$

FO הוא המרכז של המעגל AB

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$$ED = \sqrt{18 \cdot 32} = 24$$

(הקנה הוא מונבץ ואלטרנטיב)

(ההיפוטניוזה)

$$BD^2 = ED^2 + BE^2 = 24^2 + 32^2 \Rightarrow BD = 40$$

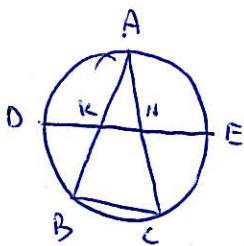
$$AD^2 = AB^2 - BD^2 = 50^2 - 40^2$$

$$AD = 30$$

$$(קטן \text{ ו} \text{ קטן}) \quad KD = 90$$

$$AD = \sqrt{BD \cdot DC} = \sqrt{22.5 \cdot 40} \Rightarrow$$

18



$$(3, 4, 5) \triangle AKN \sim \triangle ABC$$

דומי ל  $\triangle ABC$

$\leftarrow (1/2)$

$$\frac{AK}{AB} = \frac{AN}{AC} = \frac{1}{2}$$

$$\frac{KN}{BC} = \frac{1}{2} \Rightarrow KN = \frac{1}{2} \cdot 10 = 5$$

$$(חלוקה) \quad AK \cdot KB = DK \cdot KE = x(5+y)$$

$$(11) \quad AN \cdot NC = NE \cdot DN = y(5+x)$$

$$x(5+y) = y(5+x)$$

$$5x + xy = 5y + xy \Rightarrow x = y$$

$$DE = 10 = x + y + 5 = 2x + 5 \Rightarrow x = y = 4$$

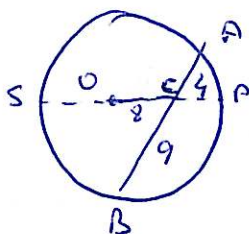
$$(11) \quad AK = KB$$

$$AK \cdot KB = x(5+y) = 4 \cdot 9 = 36$$

$$AK \cdot AK = 36 \Rightarrow AK = 6 \Rightarrow AB = AC = 12$$

$$\begin{matrix} DK = x \\ NE = y \end{matrix} \quad /NO$$

21



$$SE \cdot EP = AE \cdot EB$$

$$(2+8)(8-2) = 4 \cdot 9$$

$$R^2 - 64 = 36 \Rightarrow R = 10$$

$$AB = 2R = 13 \Rightarrow R = 6.5$$

נתון את O עם מרכז המעגל O

$$ON = AN - R = 9 - 6.5 = 2.5$$

$$(\triangle OND) \quad ND^2 = OD^2 - ON^2 = 6.5^2 - 2.5^2 \Rightarrow ND = 6$$

$$AK \cdot KB = EK \cdot KD$$

$$(\triangle KDN) \quad KD^2 = KN^2 + ND^2 = 8^2 + 6^2 \Rightarrow KD = 10$$

$$1 \cdot 12 = EK \cdot 10 \Rightarrow EK = 1.2$$

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