

13 / 102 N
2/252

25/4/20

M (6, -5)

B (X_B, 0)

BM ⊥ OX ⇔ OX ∥ BM

⇓ X_B = X_M = 6

(i) d_{BM} = √(y_M²) = √(-5)² = 5

(x-a)² + (y-b)² = R²

(ii) (6-6)² + (0+5)² = 5² = 25

R = 5

(iii) (x-6)² + (y+5)² = 25

(2) A (10, -1)

MA = d_{MA}

d_{MA}² = (6-10)² + (-5+1)² = 32

R = 5

√32 > 5

⇓
פנימי לראו A

(3) AD = AC
P'EN P'EN P'EN
P'EN P'EN P'EN

∴ Δ AMC ∽ OTCDD

AC² = AM² - MC² = (√32)² - (√25)² = 7

Δ AMC

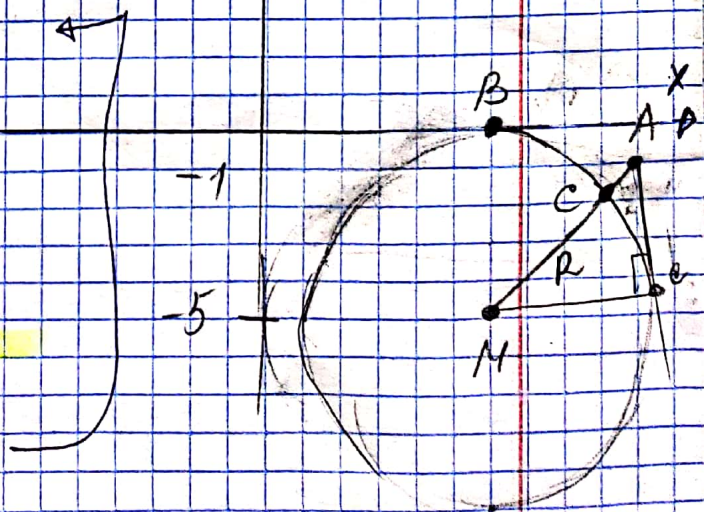
1'13 70'

AC² + MC² = AM²

AC = √7

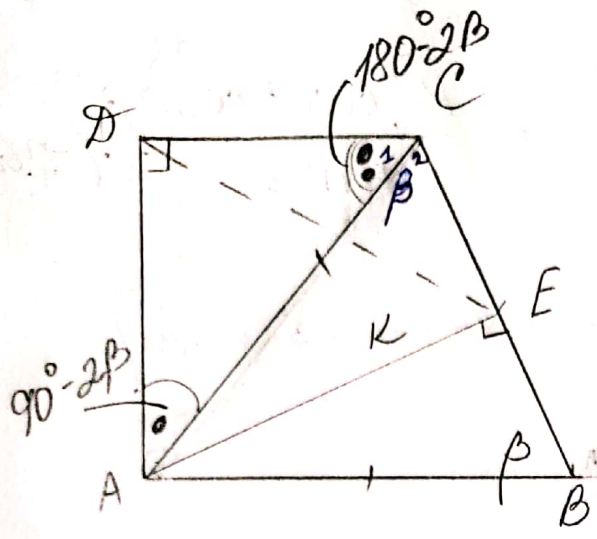
01'70 7'10N P'EN P'EN P'EN

⇓
AC ⊥ MC



מ"ד 4 ר"

12 מ"מ



- נתון:
- 1) ABCD
 - 2) AB = AC
 - 3) AE ⊥ BC
 - 4) AE = K
 - 5) ∠ABC = β
-
- שאלה: ∠ACD = ?

פתרון:

∠DCB + ∠ABC = 180° (6)

כיוון ש-AB=AC
180° = 2β

∠ABC = ∠ACB = β (7) כי שני הזוויות הן זוויות שוות

∠DCB = ∠ACD + ∠ACB (8) (2) זוויות

∠DCB = 180° - β (9) (10) זוויות

∠DCB = 180° - β (10)

∠ACD = 180° - 2β (11)

∠D = 90°

∠DAC + ∠ACD + ∠D = 180°

∠DAC = 90 - 2β

∠ABE: $\frac{AE}{\sin \beta} = AB$

AB = $\frac{K}{\sin \beta}$

∠ADC: $\frac{DC}{AC} = \sin(90 - 2\beta) = \cos 2\beta$

DC = AC · (-cos 2β) = AB(-cos 2β)

DC = $-\frac{K \cos 2\beta}{\sin \beta}$

∠ABC זווית
AC = AB
∠C = ∠B = β
EC = EB = 1/2 BC

$\sin^2 \alpha + \cos^2 \alpha = 1$

AD² + DC² = AC²

∫ ∆ ADC = $\frac{DC \cdot AD}{2}$
AD² = $\frac{K^2(1 - \cos^2 2\beta)}{\sin^2 \beta} = \frac{K^2 \sin^2 2\beta}{\sin^2 \beta}$

AD² = $\left(\frac{K}{\sin \beta}\right)^2 - \left(-\frac{K \cos 2\beta}{\sin \beta}\right)^2$
AD² = $\frac{K^2 - K^2 \cos^2 2\beta}{\sin^2 \beta} =$

AD = $\frac{K \sin 2\beta}{\sin \beta}$

(2) 1) 70ND

$$DE^2 = \frac{K^2(\cos^2 2\beta + \cos^2 \beta)}{\sin^2 \beta} + \frac{K^2 \cos \beta \cos 2\beta}{\sin^2 \beta} \cdot (-0.684)$$

$$DE^2 = \frac{K^2[\cos^2 2\beta + \cos^2 \beta - 0.684(\cos \beta \cos 2\beta)]}{\sin^2 \beta} =$$
$$= \frac{K^2(0.584 - 0.941 + 0.34 + 0.179)}{0.883} = \frac{K^2 \cdot 0.883}{0.883} = K^2$$

$$DE = K$$

$$S_{\Delta ADE} = \frac{-K \cdot \cos 2\beta \cdot K \sin 2\beta}{2 \sin \beta \sin \beta} = -\frac{K^2 \cos 2\beta \sin 2\beta}{2 \sin^2 \beta}$$

$$\textcircled{3} \quad S_{\Delta ADC} = -\frac{K^2 \cos 2\beta \sin 2\beta}{2 \sin^2 \beta} \quad \text{f.e.N}$$

$$S_{\Delta ABC} = \frac{AE \cdot BC}{2}$$

$$BC = 2EB$$

$$S_{\Delta ABC} = \frac{K \cdot 2K \cdot \cos \beta}{2 \sin \beta} = \frac{K^2 \cos \beta}{\sin \beta}$$

$$\frac{EB}{AB} = \cos \beta$$

$$EB = \frac{K}{\sin \beta} \cdot \cos \beta$$

$$EC = EB = \frac{K \cos \beta}{\sin \beta}$$

$$BC = \frac{2K \cos \beta}{\sin \beta}$$

$$\frac{S_{\Delta ADC}}{S_{\Delta ABC}} = -\frac{K^2 \cos 2\beta \sin 2\beta}{2 \cdot \sin^2 \beta} :$$

$$\cdot \frac{K^2 \cos \beta}{\sin \beta} = -\frac{K^2 \cos 2\beta \sin 2\beta}{2 \sin^2 \beta} \cdot \frac{\sin \beta}{K^2 \cos \beta} =$$

$$= -\frac{\cos 2\beta \sin 2\beta}{2 \sin \beta \cos \beta} = \frac{\cos 2\beta \sin 2\beta}{\sin 2\beta} =$$

$$\sin 2\alpha = 2 \sin \alpha \cos \alpha$$

$$\frac{S_{\Delta ADC}}{S_{\Delta ABC}} = -\cos 2\beta$$

$$\textcircled{7} \quad \frac{S_{\Delta ADC}}{S_{\Delta ABC}} = 0.766$$

$$-\cos 2\beta = 0.766$$

$$\beta = 70^\circ$$

(1)

$\Delta DEC:$

$$\frac{DE}{\sin \angle DCE} = \frac{DC}{\sin \angle CED} = \frac{CE}{\sin \angle DCE}$$

$$DE^2 = DC^2 + CE^2 - 2DC \cdot CE \cos C$$

$$DE^2 = \frac{K^2 \cos^2 2\beta}{\sin^2 \beta} + \frac{K^2 \cos^2 \beta}{\sin^2 \beta} - 2 \cos 110^\circ \left(\frac{K \cos 2\beta}{\sin \beta} \cdot \frac{K \cos \beta}{\sin \beta} \right)$$

