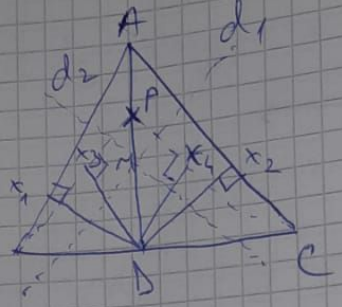
Lista de probleme

1.



$AD \perp BC$

$x_1 = p_{AB}^{\Delta}$

$x_2 = p_{AC}^{\Delta}$

$x_3 = p_{BP}^{\Delta}$

$x_4 = p_{PP}^{\Delta}$

x_1, x_2, x_3, x_4 - concentrice

Fie d_1 mediatoare pe Δx_1

Fie d_2 mediatoare pe Δx_2

$\Delta x_1 \perp d_1 \Rightarrow d_1 \parallel AB$
$\Delta x_1 \perp AB$

$\Delta x_2 \perp d_2 \Rightarrow d_2 \parallel AC$
$\Delta x_2 \perp AC$

$d_1 \cap d_2 = \{M\}$

M centrul cercului circumscris al $\Delta x_1 x_2 x_4$

$\Rightarrow x_1 x_2 x_3 x_4$ - patrulater inscriptibil

7. $F_1 = (3, 2)$

$F_2 = (1, 6)$

$e = \frac{\sqrt{5}}{3}$

a) $e = \sqrt{\frac{5}{9}} = \sqrt{1 + \frac{5}{9} - \frac{9}{9}} = \sqrt{1 - \frac{4}{9}} = \sqrt{1 - \frac{2^2}{3^2}} \Rightarrow a = 3$, $b = 2$

$\Rightarrow \mathcal{E}: \frac{x^2}{9} + \frac{y^2}{4} = 1$

$\mathcal{E} \cap O_x \Rightarrow y = 0 \Rightarrow \frac{x^2}{9} = 1 \Leftrightarrow x^2 = 9$, $x = \pm 3$

$\Rightarrow \mathcal{E} \cap O_x = \{(3,0), (-3,0)\}$

$\mathcal{E} \cap O_y \Rightarrow x = 0 \Rightarrow \frac{y^2}{4} = 1 \Leftrightarrow y^2 = 4$, $y = \pm 2$

$\Rightarrow \mathcal{E} \cap O_y = \{(2,0), (-2,0)\}$