

ZAD 86

PROSTA BC  $y = 2x - 7$

$$y = -2x + 7 = -2 \cdot \frac{7}{2} + 7 = 0$$

$$2x - 7 = -2x + 7$$

$$2x + 2x = 7 + 7$$

$$4x = 14 \quad :4$$

$$x = \frac{14}{4} = \frac{7}{2}$$

$$Q \left( \frac{7}{2}; 0 \right)$$

$$A \begin{pmatrix} x_A & y_A \\ -3 & -1 \end{pmatrix}$$

$$D \begin{pmatrix} x_D & y_D \\ 1 & 7 \end{pmatrix}$$

$$B \begin{pmatrix} x_B & y_B \\ 3 & -1 \end{pmatrix}$$

$$Q \begin{pmatrix} x_Q & y_Q \\ \frac{7}{2} & 0 \end{pmatrix}$$

$$|AD| = \sqrt{(x_D - x_A)^2 + (y_D - y_A)^2} = \sqrt{(1+3)^2 + (7+1)^2} = \sqrt{4^2 + 8^2} = \sqrt{16 + 64} = \sqrt{80} = 4\sqrt{5}$$

$$|BQ| = \sqrt{(x_Q - x_B)^2 + (y_Q - y_B)^2} = \sqrt{\left(\frac{7}{2} - 3\right)^2 + (0 + 1)^2} =$$

$$= \sqrt{\left(\frac{7-6}{2}\right)^2 + 1} = \sqrt{\frac{1}{4} + 1} = \sqrt{\frac{1+4}{4}} = \frac{\sqrt{5}}{2}$$

WZNAKAMI WISKOŚCI TRAPCEM CILIC PROSTA PROSTOPADŁA DO PODSTAWY AD -  $y = 2x + 5$  MIECZĄDWA POMEZ PUNKTAMI B (3; -1)

$$y_{\perp AD} = -\frac{1}{2}x + b$$

$$-1 = -\frac{1}{2} \cdot 3 + b$$

$$b = \frac{3}{2} - \frac{1}{2} = \frac{1}{2}$$

$$y_{\perp AD} = -\frac{1}{2}x + \frac{1}{2}$$

PRZEKŁAD PROSTEJ AD I PROSTOPADŁEJ DO NIEJ

$$-\frac{1}{2}x + \frac{1}{2} = 2x + 5$$

$$\frac{1}{2} - 5 = 2x + \frac{1}{2}x$$

$$\frac{1-10}{2} = \frac{4+1}{2}x$$

$$-\frac{9}{2} = \frac{5}{2}x \quad : \frac{5}{2}$$

$$x = \left(-\frac{9}{5}\right) \cdot \frac{2}{5} = -\frac{18}{25}$$

$$y = \left(-\frac{1}{2}\right) \cdot \left(-\frac{9}{5}\right) + \frac{1}{2} =$$

$$= \frac{9}{10} + \frac{5}{10} = \frac{14}{10} = \frac{7}{5}$$

$$X \left( -\frac{18}{25}; \frac{7}{5} \right)$$

ODLEGŁOŚĆ X OMIŁ B

$$|XB| = \sqrt{(x_B - x_X)^2 + (y_B - y_X)^2} =$$

$$= \sqrt{\left(3 + \frac{18}{25}\right)^2 + \left(-1 - \frac{7}{5}\right)^2} =$$

$$= \sqrt{\left(\frac{15+18}{5}\right)^2 + \left(\frac{-5-7}{5}\right)^2} =$$

$$= \sqrt{\left(\frac{33}{5}\right)^2 + \left(\frac{-12}{5}\right)^2} = \sqrt{\frac{576}{25} + \frac{144}{25}} =$$

$$= \sqrt{\frac{720}{25}} = \frac{12\sqrt{5}}{5}$$

$$P_{\Delta ABQD} = \frac{|AD| + |BQ|}{2} \cdot |XB| = \frac{4\sqrt{5} + \frac{\sqrt{5}}{2}}{2} \cdot \frac{12\sqrt{5}}{5} =$$

$$= \frac{8\sqrt{5} + \sqrt{5}}{2} \cdot \frac{12\sqrt{5}}{5} = \frac{9\sqrt{5}}{4} \cdot \frac{12\sqrt{5}}{5} =$$

$$= \frac{3 \cdot 9 \cdot 8}{4 \cdot 5} = 27$$

$$\underline{\underline{P_{\Delta ABQD} = 27}}$$