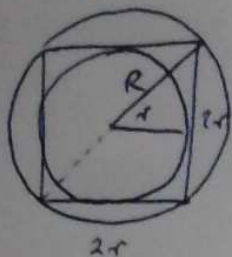


ZAD 4



z TL PITAGORASA

$$(2r)^2 = 4r^2 + 4r^2$$

$$4r^2 = 8r^2 : 4$$

$$r^2 = 2r^2 \quad | \sqrt{}$$

$$r = \sqrt{2r^2} = r\sqrt{2}$$

koło wpisane

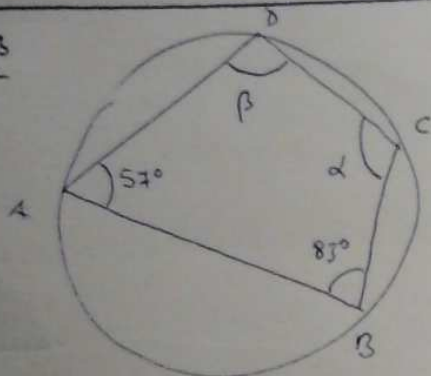
$$P_{\text{okresane}} = \pi r^2$$

$$P_{\text{okresane}} = \pi R^2 = \pi - (r\sqrt{2})^2 = \pi - 2r^2$$

DO STOSUNKU PÓŁ
NIE POTRZEBNA JEST DŁUGOŚĆ
BOKU P.D. SA ZNIEWIE

$$\frac{P_{\text{okresane}}}{P_{\text{okresane}}} = \frac{\pi r^2}{\pi r^2} = \frac{1}{2}$$

ZAD 5

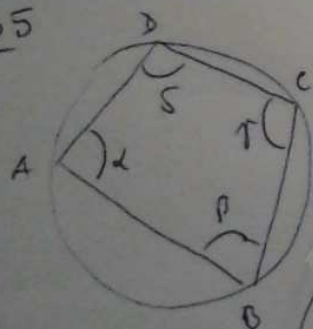


SILNIKISTAN z TL. O CIEKRODŁE
WPISANYM W OKRĄG POKŁADAMY, IŻ
SUMA NAMIEMIAN LĘGKICH KĄTÓW
JEST RÓWNA 180°

$$\alpha = 180^\circ - 57^\circ = 123^\circ$$

$$\beta = 180^\circ - 83^\circ = 97^\circ$$

ZAD 5



$$\angle DAB = 2 \angle BCD$$

$$2 \angle ABC = 3 \angle CDA$$

$$\alpha = 2 \gamma$$

$$2 \beta = 3 \delta$$

$$\angle DAB = \alpha = 120^\circ$$

$$\angle ABC = \beta = 108^\circ$$

$$\angle BCD = \gamma = 60^\circ$$

$$\angle CDA = \delta = 42^\circ$$

z TL. O CIEKRODŁE
WPISANYM POKŁADAMY

$$\alpha + \gamma = 180^\circ \rightarrow \gamma = 180^\circ - \alpha$$

$$\beta + \delta = 180^\circ \quad S = 180^\circ - \rho$$

$$\alpha = 2(180^\circ - \alpha)$$

$$\alpha = 360^\circ - 2\alpha$$

$$\alpha + 2\alpha = 360^\circ$$

$$3\alpha = 360^\circ$$

$$\alpha = 120^\circ$$

$$\gamma = 180^\circ - 120^\circ = 60^\circ$$

$$2\beta = 3(180^\circ - \beta)$$

$$2\beta = 540^\circ - 3\beta$$

$$2\beta + 3\beta = 540^\circ$$

$$5\beta = 540^\circ$$

$$\beta = 108^\circ$$

$$\delta = 180^\circ - 108^\circ = 72^\circ$$