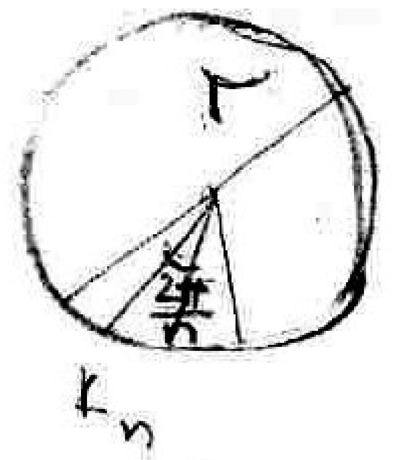
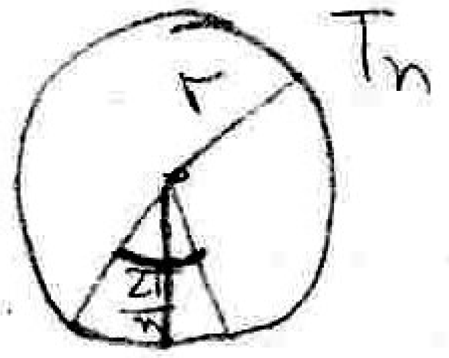
Анализ II



$$S(K_n) = \frac{n \cdot r^2 \cdot \sin\left(\frac{2\pi}{n}\right)}{2} = \pi r^2 \overbrace{\frac{\sin\left(\frac{2\pi}{n}\right)}{\frac{2\pi}{n}}}^{\to 1} \xrightarrow[n\to\infty]{} \pi r^2$$

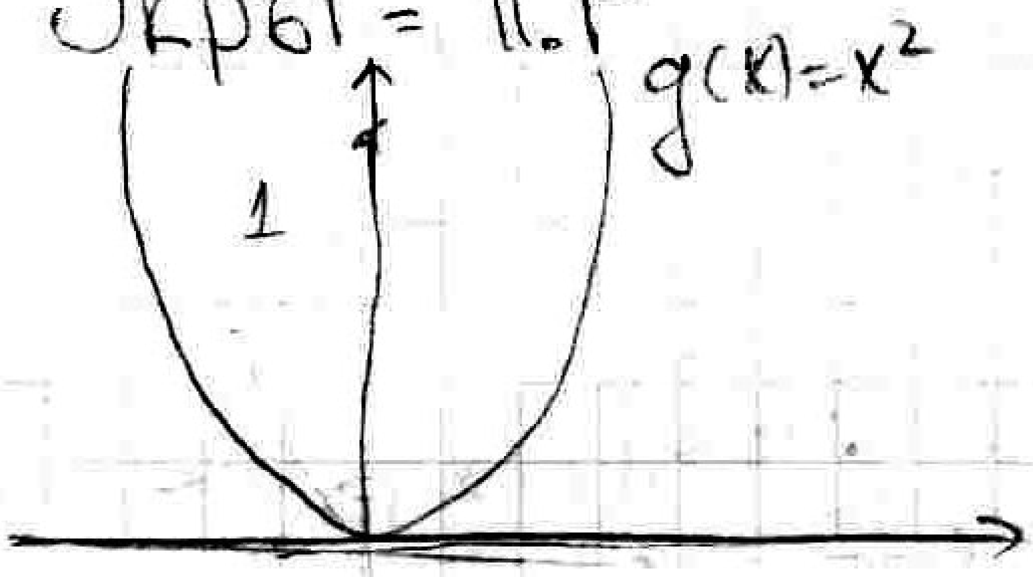


$$\frac{\frac{a}{2}}{r} = tg\frac{\pi}{n} \qquad a = 2r\,tg\frac{\pi}{n}$$

$$S(T_n) = n \cdot \frac{2r^2 \cdot tg\frac{\pi}{n}}{2} = n \cdot r^2 \cdot tg\frac{\pi}{n} =$$

$$= \pi r^2 \left(\frac{tg\left(\frac{\pi}{n}\right)}{\frac{\pi}{n}}\right) \xrightarrow[n\to\infty]{} \pi \cdot r^2 \cdot 1 = \pi r^2$$

$S_{кръг} = \pi \cdot r^2$



$$S(T_n) = \sum_{i=1}^{n-1} \frac{1}{n}\left(\frac{i}{n}\right)^2 = \frac{1}{n^3}\sum_{i=1}^{n-1} i^2 =$$

$$= \frac{1}{n^{3}} \cdot \frac{(n-1)\cdot n(2n-1)}{6} = \frac{(n-1)(2n-1)}{6n^2}$$

$x_i = \frac{i}{n}, \quad i = 0 \div n$

$$\sum_{k=1}^{n} k^2 = \frac{n(n+1)(2n+1)}{6}$$

$$S(T_n) = \frac{(n-1)(2n-1)}{6n^2} = \frac{1}{6}\left(1-\frac{1}{n}\right)\left(2-\frac{1}{n}\right) \xrightarrow[n\to\infty]{} \frac{1}{6}\cdot 1 \cdot 2 = \frac{1}{3}$$

$$S(K_n) = \sum_{i=1}^{n} \frac{1}{n}\cdot\left(\frac{i}{n}\right)^2 = \frac{1}{n^3}\sum_{i=1}^{n} i^2 = \frac{1}{n^3}\cdot\frac{n\cdot(n+1)(2n+1)}{6} = \frac{1}{6}\left(1+\frac{1}{n}\right)\left(2+\frac{1}{n}\right) \xrightarrow[n\to\infty]{}$$

$$\xrightarrow[n\to\infty]{} \frac{1}{6}\cdot 1 \cdot 2 = \frac{1}{3}$$

$D = \{(x,y) : 0 \le x \le 1, 0 \le y \le x^2\}$

$S(D) = \frac{1}{3}$

$S_\Delta - \frac{1}{2}$ $\qquad S_\Delta = S_\circ - S(D) = \frac{1}{2} - \frac{1}{3} = \frac{1}{6}$