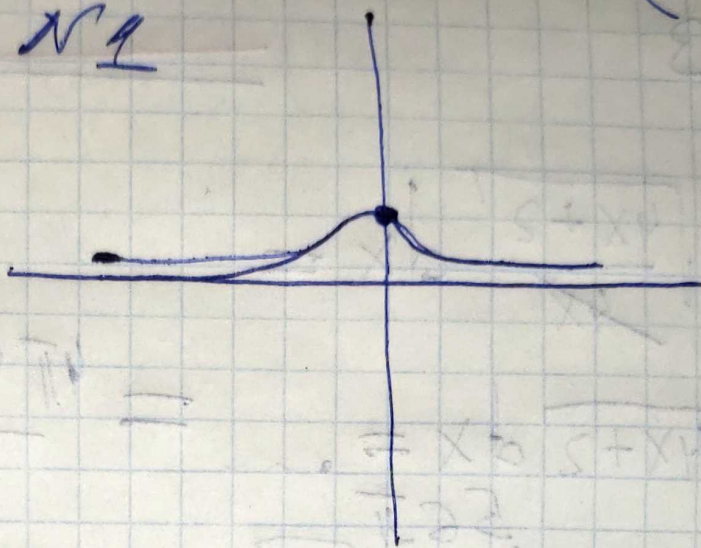


UUDY PK1 Burem N'13 (26)

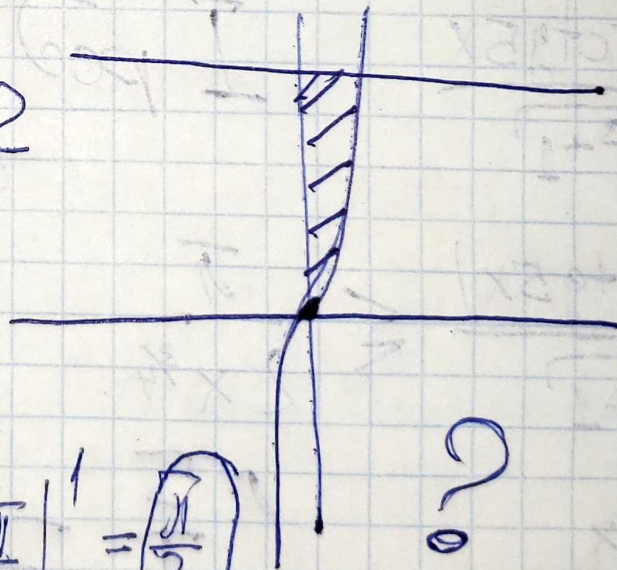
$$y = \frac{1}{1+x^2}$$



$$y = \arcsin x$$

$$y = \frac{\pi}{2}$$

N2



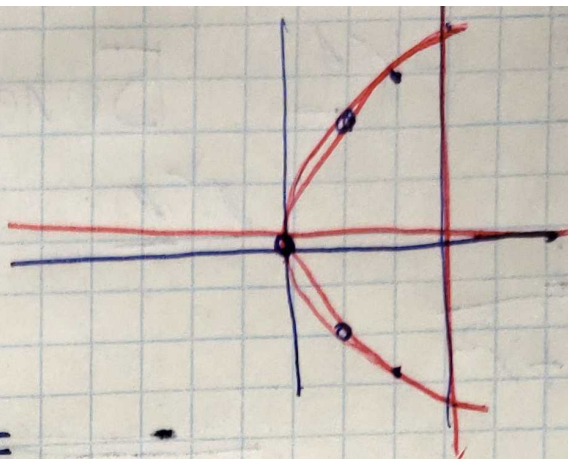
$$V_{y_1} = \pi \int_0^1 x \cdot \frac{\pi}{2} dx = \frac{x^2 \pi}{2} \Big|_0^1 = \frac{\pi}{2}$$

$$V_{y_2} = \pi \int_0^1 x \arcsin x dx = \int u = \arcsin x \quad du = \frac{1}{\sqrt{1-x^2}} dx =$$

$$= \pi \left(\arcsin x - \arcsin x \right) \Big|_0^1 = 0$$

$$y = \pm \sqrt{4x}$$

$$x = 3$$



$$S = 2\pi \int_0^3 \sqrt{4x} \cdot \sqrt{\frac{4x+2}{4x}} dx =$$

$$= 2\pi \int_0^3 \sqrt{4x+2} dx = \dots = \frac{4\pi (4x+2) \cdot \sqrt{4x+2}}{3} \Big|_0^3 =$$

$$= \frac{56\pi \sqrt{14}}{3} - \frac{8\pi \sqrt{2}}{3}$$

$$\int_1^{\infty} \frac{\arctg 5x}{\sqrt[4]{x^3+1}} dx \quad N4 \quad I_{poc}$$

$$\frac{1}{\sqrt[4]{x^3+1}} \arctg 5x \leq \frac{\pi}{2x^{3/4}}$$

$$q = \frac{3}{4} \quad q < 1$$

Несходо

$$\int_0^1 \frac{dx}{\sqrt{x}(e^{x^2}-1)} \quad N5 \quad I_{poc}$$

$$q = \frac{5}{2} \quad q > 1$$

$$\frac{1}{x^{1/2}(e^{x^2}-1)} \leq \frac{1}{x^{5/2}}$$

Несходо