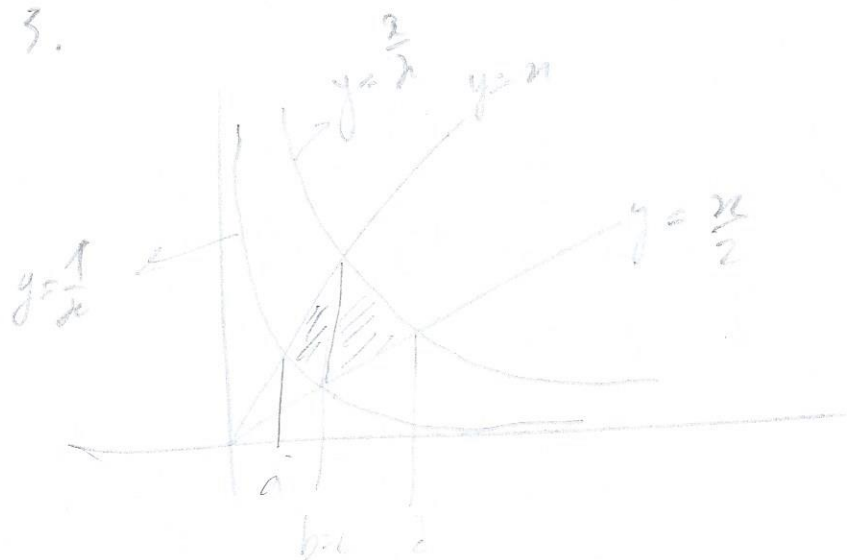


3.



$$a = \begin{cases} y = x \\ y = \frac{1}{x} \end{cases} \Leftrightarrow \begin{cases} y = x \\ u = \frac{1}{u} \end{cases} \Rightarrow u^2 = 1 \Rightarrow \begin{cases} u = 1 \\ u = -1 \end{cases}$$

$$b = \begin{cases} y = \frac{1}{x} \\ y = \frac{x}{2} \end{cases} \Leftrightarrow \begin{cases} \frac{1}{x} = \frac{x}{2} \\ x^2 = 2 \end{cases} \Rightarrow \begin{cases} x = \sqrt{2} \\ x = -\sqrt{2} \end{cases}$$

$$c = \begin{cases} y = \frac{x}{2} \\ y = \frac{2}{x} \end{cases} \Leftrightarrow \begin{cases} \frac{x}{2} = \frac{2}{x} \\ x^2 = 4 \end{cases} \Rightarrow \begin{cases} x = 2 \\ x = -2 \end{cases}$$

$$\int_1^{\sqrt{2}} dx \int_{\frac{1}{x}}^x xy \, dy + \int_{\sqrt{2}}^2 dx \int_{\frac{x}{2}}^{\frac{2}{x}} xy \, dy$$