Задача 4.

$A = \begin{pmatrix} 1 & 10 \\ \delta & 1 \end{pmatrix}$ ~~det A~~

$(1-r_2)^2 - 10\delta = 0 \quad 1-r_2 = \pm\sqrt{10\delta} \Rightarrow r_1 = 1 \pm \sqrt{10\delta}$

$\varepsilon(\delta) = 1 + \sqrt{10\delta}$

$k(\delta) = \frac{d\varepsilon(\delta)}{d\delta} = \sqrt{10} \cdot \frac{1}{2\sqrt{\delta}}$; $k(10) = \frac{\sqrt{10}}{2\sqrt{10}} = \frac{1}{2}$

$k\left(\frac{1}{10}\right) = \frac{\sqrt{10}}{2 \cdot \frac{1}{\sqrt{10}}} = 5$