№4

$$A = \begin{pmatrix} 1 & 10 \\ \delta & 1 \end{pmatrix} \quad \chi_A(\lambda) = (1-\lambda)^2 - 10\delta = \lambda^2 - 2\lambda + 1 - 10\delta \Rightarrow$$

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

$$k(\delta) = \frac{\partial \varepsilon(\delta)}{\partial \delta} = \frac{\sqrt{10}}{2\sqrt{\delta}} \Rightarrow$$

$$\Rightarrow k(\delta = 10) = \frac{1}{2}$$

$$k(\delta = 0{,}1) = 5$$