EXERCISES ON PARTS 4 AND 5
(TO GET +0.5 TO THE FINAL MARK)
SEND SOLUTIONS BY EMAIL

1. Prove that on the open set of invertible $p \times p$ real matrices M we have

$$\boxed{\operatorname{grad} \log \det M = M^{-1}}$$

2. Suppose that $\mathcal{G}$: 1—2—3, the mean $\xi = 0$ and
$$\tilde{\Sigma} = \begin{pmatrix} 1 & 1 & 0.9 \\ 1 & 2 & 2 \\ 0.9 & 2 & 3 \end{pmatrix}.$$
Compute by the clique-separator formula the MLEs $\hat{K}$ and $\hat{\Sigma}$.