Stat776 HW05

With data in 5.11 on page 263 from $N(\mu, \Sigma)$, SAS produced $n = 9$, $\overline{X} = \begin{pmatrix} 5.18556 \\ 16.0700 \end{pmatrix}$ and $S = \begin{pmatrix} 176.0042 & 287.2412 \\ 287.2412 & 527.8493 \end{pmatrix}$.

(1) Construct a 90% confidence region for $\mu = \begin{pmatrix} \mu_1 \\ \mu_2 \end{pmatrix}$ in the form $(\mu - b)' A (\mu - b) \leq 1$. Keep 4 digits after decimal points. Caution: A but not A^{-1}.

(2) Find a 90% confidence interval for $\mu_1 - \mu_2$.

(3) Find simultaneous confidence intervals for μ_1 and μ_2 with overall confidence coefficient 90% by Bonferroni method.

(4) Find simultaneous confidence intervals for μ_1 and μ_2 with overall confidence coefficient 90% by Scheffe method.