Problem 2.30

Mean of z:

$$E[z] = R^{-1} \begin{pmatrix} \Lambda\mu - A^T L b \\ Lb \end{pmatrix}$$

Covariance of z:

$$cov[z] = R^{-1} = \begin{pmatrix} \Lambda^{-1} & \Lambda^{-1}A^T \\ A\Lambda^{-1} & L^{-1} + A\Lambda^{-1}A^T \end{pmatrix}$$

Hence:

$$E[z] = \begin{pmatrix} \Lambda^{-1} & \Lambda^{-1}A^T \\ A\Lambda^{-1} & L^{-1} + A\Lambda^{-1}A^T \end{pmatrix} \begin{pmatrix} \Lambda\mu - A^T L b \\ Lb \end{pmatrix} = \begin{pmatrix} \mu \\ A\mu + b \end{pmatrix}$$