

**5A:**

**#15:** You should show that  $\lambda$  is an eigenvalue of  $T$  if and only if  $\lambda$  is an eigenvalue of  $S^{-1}TS$ . Moreover, a vector  $v$  is an eigenvector of  $T$  corresponding to  $\lambda$  if and only if  $S^{-1}(v)$  is an eigenvector of  $S^{-1}TS$  corresponding to  $\lambda$ .