

Due: Thursday, November 1

1. Prove Result A.19.
2. Prove the second result on slide 24 of the notes on determinants.
3. Prove Fact V7 on slide 21 of the notes on eigenvalues, eigenvectors, and matrix decompositions.
4. Prove the results on slide 29 of the notes on eigenvalues, eigenvectors, and matrix decompositions. Note that the matrix A is not necessarily symmetric, so the spectral decomposition theorem does not apply.
5. Prove Corollary 5.2 (c) (multivariate normal density).
6. From the text, complete exercise 5.7 and use it to prove Result 5.11.
7. Prove Result 5.12 (F density).
8. Prove Corollary 5.4 (independence of quadratic forms).
9. Derive the mean and variance of a $\chi_p^2(\phi)$ random variable.