CSci 2033 Practice Exercises Set #11 March 23, 2018

- **0** Text: Sect. 2.5: Exercises 1, 3, 7, and 9.
- Sect. 3.1: Practice problem, Exercises 1, 3, 11, 39.
- Sect. 3.3: Practice problem, Exercises 1, 25, 27.
- **1** Answer and give a short proof: [from Set #10]
- (f) If A and B are invertible then so is AB^{-1} . (T/F) If true what is the inverse of AB^{-1} ?
- (g) If A and B are invertible then so is $A^T B$. (T/F) If true what is the inverse of $A^T B$?
- 2 Calculate the inverse of the matrix shown on $A = \begin{bmatrix} 2 & 2 & -4 \\ -1 & 0 & 2 \\ 1 & 3 & -1 \end{bmatrix}$
- **3** Find the LU factorization of the matrix A
- 4 Use your answer in (3) to compute det(A).

5 Explain with a simple diagram why a linear mapping that is not *one-to-one* cannot be invertible. Same thing for a mapping that is not *onto*.