Matrix Operations[1]

1. Try the following commands (at the prompt and then press Enter):
```
clear
M = [1,3,-1,6;2,4,0,-1;0,-2,3,-1;-1,2,-5,1]
det(M)
inv(M)
```

2. Repeat the above procedure for the matrix:

$$\mathsf{N} = \begin{bmatrix} -1 & -3 & 3 \\ 2 & -1 & 6 \\ 1 & 4 & -1 \\ 2 & -1 & 2 \end{bmatrix}$$

3. Multiply M and N using `M * N`. Can the order of multiplication be switched? Why or why not? Try it to see how MATLAB reacts.

4. Find the determinant and inverse of the following matrix:

$$\mathsf{A} = \begin{bmatrix} 1.2969 & .8648 \\ .2161 & .1441 \end{bmatrix}$$

5. Let B be the matrix obtained from A by rounding off to three decimal places. Find the determinant and inverse of B. How do A^{-1} and B^{-1} differ? Explain how this happened.

6. Prepare a brief (< 1 page) written report describing what happened and answering all the questions. Writing quality will play a part in your grade.

This exercise introduces some basic matrix operations, the importance of matrix dimensions, and numerical sensitivity.