MATH 335 Quiz 6 Name: .

Show all work. 5 points each.

1. If H is an $n \times n$ matrix and the equation $H\mathbf{x} = \mathbf{c}$ is inconsistent for some $\mathbf{c}$ in $\mathbb{R}^n$, what can you say about the equation $H\mathbf{x} = \mathbf{0}$? Explain. [1]

2. Find the determinant of the matrix by taking a cofactor expansion of a row or column of your choice. **Show all work.**

$$\begin{bmatrix} 4 & 0 & 0 & 1 \\ 7 & -1 & 0 & 0 \\ 2 & 6 & 3 & 0 \\ 5 & -8 & 4 & -3 \end{bmatrix}$$

References

[1] K. Gröchenig and M. Leinert. Wiener's lemma for twisted convolution and Gabor frames. *Preprint*, 2003.