

Name: _____

Quiz 9

Justify all your work. Partial credit will be given if you show your reasoning.

(1) Find the determinant of

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

by using the cofactor expansion of A along the first row: i.e.,

$$\begin{vmatrix} 4 & 0 & 0 & 0 \\ 7 & -1 & 0 & 0 \\ 2 & 6 & 3 & 0 \\ 5 & -8 & 4 & -3 \end{vmatrix} = 4 \cdot (-1)^{1+1} \cdot \begin{vmatrix} -1 & 0 & 0 \\ 6 & 3 & 0 \\ -8 & 4 & -3 \end{vmatrix} + 0 \cdot (-1)^{1+2} \cdot \begin{vmatrix} 7 & 0 & 0 \\ 2 & 3 & 0 \\ 4 & 4 & -3 \end{vmatrix} \\ + 0 \cdot (-1)^{1+3} \cdot \begin{vmatrix} 7 & -1 & 0 \\ 2 & 6 & 0 \\ 5 & -8 & -3 \end{vmatrix} + 0 \cdot (-1)^{1+4} \cdot \begin{vmatrix} 7 & -1 & 0 \\ 2 & 6 & 3 \\ 5 & -8 & 4 \end{vmatrix}.$$