Quiz 5, Linear Algebra

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Name: _____

1. (4 points) Calculate $\det A$ for $A = \begin{bmatrix} 4 & -7 & 3 & 0 & -5 \\ 0 & 3 & 0 & 0 & 0 \\ 7 & -6 & 4 & 4 & -8 \\ 5 & 5 & 2 & 0 & 0 \\ 0 & 9 & -1 & 0 & 2 \end{bmatrix}$.

2. (3 points) Let A and P be square matrices, with P invertible. Show that $\det(PAP^{-1}) = \det A$.

3. (3 points) Can a square matrix with two identical columns be invertible? Why or why not? Make sure you explain your reasoning.