

WORKSHEET 3/22/23
MATH 2331, SPRING 2023

- (1) Compare the determinants of the matrices $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and $\frac{1}{2} \begin{bmatrix} -4 & 2 \\ 3 & -1 \end{bmatrix}$. What do you notice?
- (2) Calculate $\det(A^{-1})$ in terms of $\det(A)$.
- (3) Suppose that A and B are similar $n \times n$ matrices. What can you say about $\det(A)$ and $\det(B)$?
- (4) Use Laplace expansion across the fourth row to calculate the determinant of the matrix

$$A = \begin{bmatrix} 1 & 0 & 1 & 2 \\ 9 & 1 & 3 & 0 \\ 9 & 2 & 2 & 0 \\ 5 & 0 & 0 & 3 \end{bmatrix}.$$