

MAT 211: Linear Algebra
Problem Set 10

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If A, B are $n \times n$ matrices, then

$$\det(AB) = \det(A) \det(B).$$

Problem 1. (5 points) Consider $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ and $B = \begin{bmatrix} e & 0 \\ 0 & f \end{bmatrix}$. Compute AB , $\det(A)$, $\det(B)$, $\det(AB)$. Verify that indeed

$$\det(A) \det(B) = \det(AB).$$

Due Date: Thursday April 25.