QUESTION
The $n \times n$ matrices A and B are called similar if $B = M^{-1}AM$ for some invertible M. Show that in this case $\det A = \det B$.

ANSWER
$\det(M^{-1}AM) = \det M^{-1} \times \det A \times \det M = (\det M)^{-1} \times \det A \times \det M = \det A$.