## QUESTION

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

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

