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Q: If A, B are square matrix, and AB=I. Does BA=I?

$$\text{From} \quad AB = I$$

$$\det(AB) = 1$$

$$\det(A)\det(B) = 1$$

We conclude that $\det(B) \neq 0$

$$AB = I$$

$$BAB = B$$

$$(BA)B = B$$

$$(BA - I)B = 0$$

Since $\det(B) \neq 0$, we know that B is not 0 divisor

We get $\quad BA = I$