Homework: 1

Due: September 22.

1. Let A be an orthogonal matrix. Prove that $|\det(A)|=1$. Show that if B is also orthogonal and $\det(A)=-\det(B)$ then $A+B$ is singular.
2. Trefethen 2.5, 3.2, 3.3
3. Prove that $\|xy^*\|_F=\|xy^*\|_2=\|x\|_2\|y\|_2$ for any x,y in C^n