

Name:

Assume that a matrix A is rank one. That is, we can write

$$A = uv^\top$$

where u and v are both vectors in \mathbb{R}^n .

1. Prove that

$$A^k = (v^\top u)^{k-1}A$$

for all $k = 1, 2, \dots$

2. Obtain the e^{At} in a closed form.

Continue your solutions here...