THE UNIVERSITY OF TEXAS AT SAN ANTONIO
EE 5143
LINEAR SYSTEMS AND CONTROL

QUIZ # 4
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September 19, 2017

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 $k = 1, 2, \ldots$.

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

Continue your solutions here...