Name: **Recitation Section:**

Math 2802 N1-N3 Quiz

March 2nd, 2018

The quiz has a total of 10 points and you have 15 minutes. Read carefully and clearly justify how you obtained your answers.

1. [4 points] Write the definition of *Steady-vector of a stochastic matrix P*; and find two distinct steady-state vectors for $P = \begin{pmatrix} 1/2 & 0 & 1/2 \\ 0 & 1 & 0 \\ 1/2 & 0 & 1/2 \end{pmatrix}$

2. [6pts] Answer true or false

a) If $\lambda = 1$ is an eigenvalue of a stochastic matrix P, then P is regular.

b) If $Pq = q$ for the transition matrix of a markov chain, then the entries in q are interpreted as occupation times of the sates in the long run.

c) If C is the compsumtion matrix for an economy with final demand d then the production vector can be computed using $x = (C - I)^{-1}d$.