

STAT 611 FALL 2011 HW 6

DUE THURSDAY, NOVEMBER 3

1. PROVE THAT  $V$  SQUARE MATRIX  $A$   
SUCH THAT  $A^2 = mA$  FOR SOME  
SCALAR  $m$ ,  $\text{TRACE}(A) = m \text{RANK}(A)$ .

(NOTE THAT THIS RESULT IMPLIES  
 $\text{TRACE}(B) = \text{RANK}(B)$  FOR ANY  
IDEMPOTENT MATRIX  $B$ .)

2. COMPLETE THE FOLLOWING PROBLEMS  
FROM THE TEXT.

4.26, 4.27, 5.1 (ONLY TURN IN a, b, cd)

5.3 (a, b), 5.4, 5.6, 5.7 (THIS CAN BE  
USED TO PROVE RESULT 5.11 AS ON PAGES 106-108.)

5.8.