

**MATH 205A,B - LINEAR ALGEBRA
FALL 2015**

QUIZ 10

NAME:

Section:(Circle one) A(8 : 00) B(9 : 30)

Show **ALL** your work **CAREFULLY**.

(a) Let

$$A = \begin{bmatrix} 1 & 0 \\ -1 & 1 \\ 2 & 1 \end{bmatrix}.$$

Find an **orthonormal** basis for $\text{Col}A$.

(b) Consider the matrix

$$B = \begin{bmatrix} \frac{1}{\sqrt{2}} & \frac{1}{\sqrt{2}} & 0 \\ 0 & 0 & 1 \\ \frac{1}{\sqrt{2}} & -\frac{1}{\sqrt{2}} & 0 \end{bmatrix}.$$

Find B^{-1} . (Hint: is B orthogonal?)