

MA 442 - Quiz

March 25

Name: _____ **BUID:** _____

Question 1. Let $a \in \mathbb{R}$ be a real scalar. Find the rank of the matrix $A = \begin{bmatrix} 1 & a & a^2 \\ a & a^2 & 1 \end{bmatrix}$. (Hint: The rank of the matrix depends on the value of a , you must determine how the rank depends on a .)

Question 2. The following matrix

$$B = \begin{bmatrix} 1 & 0 & 1 \\ 1 & 1 & 0 \\ 0 & 1 & 1 \end{bmatrix} \tag{1}$$

is invertible. Find B^{-1} .