The rules for this quiz are as follows:

- **Write your name in the upper-right hand corner of the quiz.**
- This quiz will last for 10 minutes.
- Show **ALL** work for partial/full credit. This includes any definitions, mathematics, figures, etc.
- No collaboration of any kind is allowed on the quiz.
- The quiz is closed book and closed notes.
- Calculators are allowed on the quiz provided they are used only for basic calculations.

1. (10 points) Show how to convert the least squares problem

\[ Ax \approx b, \]

where \( A \) is \( m \times n, m > n \) into the corresponding upper triangular form, i.e.,

\[
\begin{bmatrix}
R \\
0
\end{bmatrix} x \approx \begin{bmatrix} c_1 \\ c_2 \end{bmatrix}.
\]

**Hint:** Consider

\[ A = Q \begin{bmatrix} R \\ 0 \end{bmatrix}. \]