

Remember that your work is graded on the quality of your writing and explanation as well as the validity of the mathematics.

- (1) (10 Points) Construct a  $3 \times 3$  nonzero matrix  $A$  such that the vector  $\begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$  is a solution of  $Ax = 0$ .

- (2) (10 Points) Find the value(s) of  $h$  for which the vectors are linearly dependent. Justify each answer.

$$\begin{pmatrix} 1 \\ 5 \\ 3 \end{pmatrix}, \begin{pmatrix} 2 \\ 9 \\ 5 \end{pmatrix}, \begin{pmatrix} 4 \\ h \\ 9 \end{pmatrix}.$$