

2.9 Handwrite Practice

Handwrite your responses to 1. and 2. below and collate them into a PDF for submission into ASULearn.

1. Examine $\begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$

- What is the entire column space?
- What is the rank?
- What is a basis for the null space, if it exists? Show reasoning.
- What is the nullity?

2. Re-examine 2.8 handwritten (solutions are in the re-engage 2.8 handwritten activity) so that you can extend

it, where $A = \begin{bmatrix} 1 & 2 & 3 & 3 \\ 2 & 4 & 9 & 3 \\ 2 & 4 & 6 & 6 \end{bmatrix}$.

- What is the rank?
- Fill in the 2 blanks:

The column space is a _____ inside of \mathbb{R} _____

- What is the nullity?
- Fill in the 2 blanks:

The null space is a _____ inside of \mathbb{R} _____

- Apply the rank-nullity theorem and show this. It will look something like $1 + 2 = 3$, but the relevant numbers for this matrix.