

## Handwritten HW 21

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35. Suppose a  $4 \times 7$  matrix  $A$  has four pivot columns. Is  $\text{Col}A = \mathbb{R}^4$ ? Is  $\text{Nul}A = \mathbb{R}^3$ ? Explain your answers.

*Solution:*

39. If  $A$  is a  $7 \times 5$  matrix, what is the largest possible rank of  $A$ ? If  $A$  is a  $5 \times 7$  matrix, what is the largest possible rank of  $A$ ? Explain your answers.

*Solution:*

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49. Justify the following equality:  $\dim \text{Row } A + \text{nullity } A = n$ , the number of columns of  $A$ .

*Solution:*

50. Justify the following equality:  $\dim \text{Row } A + \text{nullity } A^T = m$ , the number of rows of  $A$ .

*Solution:*