

MATH 54 – SOLUTION TO 4.6.9

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By the Rank-Theorem, we have:

$$\dim(\text{Col}(A)) = 6 - \dim(\text{Nul}(A)) = 6 - 3 = 3$$

But this does **NOT** imply that $\text{Col}(A) = \mathbb{R}^3$, because $\text{Col}(A)$ is in \mathbb{R}^4 , so it **CANNOT** equal to \mathbb{R}^3 .