

MATH 54 – SOLUTION TO 4.3.21

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Remember that you have to **justify** the True/False questions on the homework! You don't have to write an essay, just briefly explain why a statement is true or false.

- (a) **FALSE** (consider $V = \mathbb{R}^2$, then $\left\{ \begin{bmatrix} 1 \\ 1 \end{bmatrix} \right\}$ is linearly independent).
- (b) **FALSE** ($\{\mathbf{b}_1, \dots, \mathbf{b}_p\}$ *could* be linearly dependent!)
- (c) **TRUE** (by the Invertible Matrix Theorem)
- (d) **FALSE** (it's the *smallest* spanning set, see page 200)
- (e) **FALSE** (row-operations *preserve* linear independence relationships among the columns, see page 199)