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AssessmentGraded Assignment due Feb 8, 2017 17:30 IST 

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Exercises: Overdetermined systems

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Redundancy

4/4 points (ungraded)

For a given matrix, select the right options and give its redundancy:

$$A = \begin{bmatrix} 3 & 1 \\ 1 & 3 \end{bmatrix}$$

☒ determined☐ overdetermined☐ underdetermined

Redundancy:

- ▶ 4. Best Linear Unbiased Estimation (BLUE)
- ▶ Pre-knowledge Mathematics
- ▶ MATLAB Learning Content

✓ Answer: 0

Explanation

$$\text{rank}(A) = 2 = m = n$$

$$A = \begin{bmatrix} 3 & 6 \\ 1 & 2 \\ 1 & 2 \end{bmatrix}$$

☐ determined☒ overdetermined☒ underdetermined

Redundancy:

✓ Answer: 2

Explanation

This is an interesting case, $\text{rank}(A) = 1$ which is smaller than $m = 3$ and $n = 2$. Therefore the system is both overdetermined and underdetermined.

$$A = \begin{bmatrix} 3 & 5 \\ 1 & 2 \\ 1 & 2 \end{bmatrix}$$

☐ determined☒ overdetermined☐ underdetermined

Redundancy:

✓ Answer: 1

Explanation

$\text{rank}(A) = 2 = n$ and $m = 3$

$$A = \begin{bmatrix} 3 & 1 & 2 \\ 1 & 0 & 2 \\ 6 & 1 & 4 \end{bmatrix}$$

☒ determined☐ overdetermined☐ underdetermined

Redundancy:

✓ Answer: 0

✓ Correct (4/4 points)



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