

Question 1 True/False: Let A be any $m \times n$ matrix, then $\vec{0}$ is in $\text{Nul } A$.

Multiple Choice:

- (a) True ✓
- (b) False

Question 2 True/False: Let A be any $m \times n$ matrix, then $\vec{0}$ is in $\text{Col } A$.

Multiple Choice:

- (a) True ✓
- (b) False

Question 3 True/False: Let A be any $m \times n$ matrix, then $\text{Col } A = \text{Span}\{\vec{a}_1, \dots, \vec{a}_n\}$ where $A = [\vec{a}_1, \dots, \vec{a}_n]$.

Multiple Choice:

- (a) True ✓
- (b) False

Question 4 True/False: Let A be any $m \times n$ matrix, then $\text{Col } A$ is a subspace of \mathbf{R}^n

Multiple Choice:

- (a) True
- (b) False ✓

Question 5 True/False: Let A be any $m \times n$ matrix, then $\text{Col } A$ is a subspace of \mathbf{R}^m

Multiple Choice:

- (a) True ✓
 - (b) False
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Question 6 True/False: Let A be any $m \times n$ matrix, then $\text{Nul } A$ is a subspace of \mathbf{R}^m

Multiple Choice:

- (a) True
 - (b) False ✓
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Question 7 True/False: Let A be any $m \times n$ matrix, then $\text{Nul } A$ is a subspace of \mathbf{R}^n

Multiple Choice:

- (a) True ✓
 - (b) False
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Question 8 True/False: Let A be any $m \times n$ matrix, then A is \mathbf{R}^m

Multiple Choice:

- (a) True
 - (b) False ✓
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Question 9 Suppose $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$ is a solution to $A\vec{x} = \vec{0}$ where A is a 5×2 matrix. Is $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$ in $\text{Nul } A$?

Multiple Choice:

- (a) Yes ✓
 - (b) No
 - (c) Not enough information given to determine
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Question 10 Suppose $A \begin{bmatrix} 1 \\ 4 \end{bmatrix} = \begin{bmatrix} 5 \\ 6 \\ 7 \end{bmatrix}$. Which of the following statements is true?

Multiple Choice:

- (a) $\begin{bmatrix} 1 \\ 4 \end{bmatrix} \in \text{Col } A$
 - (b) $\begin{bmatrix} 5 \\ 6 \\ 7 \end{bmatrix} \in \text{Nul } A$
 - (c) $\begin{bmatrix} 5 \\ 6 \\ 7 \end{bmatrix} \in \text{Col } A$ ✓
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