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Unit 5 - Week 3

Course outline

How does an NPTEL online course work?

Week 0 - Welcome to the course!

Week 1

Week 2

Week 3

● Lecture 13 :
Linear Span,
Linear
Independence
and Basis I
(unit?
unit=24&lesson=31)

● Lecture 14 :
Linear Span,
Linear
Independence
and Basis II
(unit?
unit=24&lesson=33)

Assignment 3 - Objective

The due date for submitting this assignment has passed. **Due on 2020-03-18, 23:59 IST.**
As per our records you have not submitted this assignment.

1) Let A be an $n \times n$ real matrix. The row space (column space) of A is the set of all linear combinations of rows (columns) of A . Which of the following statements is true? **1 point**

- The row space and the column space are equal.
- The row space and the column space have intersection equal to the zero space.
- The row space and the column space have the same dimension.
- None of the above.

No, the answer is incorrect.

Score: 0

Accepted Answers:

None of the above.

2) Let A be a 2×2 matrix with each entry an integer. State whether the following is true or false. **1 point**

If A is invertible, then for any vector $b \in \mathbb{R}^2$ with integer entries, the unique solution of the system $Ax = b$ will have integer entries.

- True
- False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

3) State whether True or False. **1 point**
Let A be an $n \times n$ real matrix and let R denote the reduced REF of A . Let B be a matrix of the same

Lecture 15 :
Linear Span,
Linear
Independence
and Basis III
(unit?
unit=24&lesson=34)

Lecture 16 :
Row Space,
Column Space,
Rank-Nullity
Theorem I (unit?
unit=24&lesson=35)

Lecture 17 :
Row Space,
Column Space,
Rank-Nullity
Theorem II
(unit?
unit=24&lesson=36)

Lecture 18 :
Row Space,
Column Space,
Rank-Nullity
Theorem III
(unit?
unit=24&lesson=37)

Quiz :
**Assignment 3 -
Objective
(assessment?
name=72)**

Assignment 3 -
Subjective
(/noc20_ma08/subjective?
name=73)

Weekly
Feedback (unit?
unit=24&lesson=76)

Download
Videos (unit?
unit=24&lesson=84)

Assignment 3 -
Subjective:
Solutions (unit?
unit=24&lesson=100)

Week 4

Week 5

Week 6

Week 7

Week 8

size as A , formed by taking abasis rows of the row space of A and additional zero rows, if necessary. Then the reduced REF of B is also R .

- True
 False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

4) State whether True of False. **1 point**
The zero matrix of any order is in reduced REF.

- True
 False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

5) State whether True or False. **1 point**

If A is a square matrix with real entries such that the row space and column space of A are equal, then A has full rank.

- True
 False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

