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Unit 8 - Week 6

Assignment 6 - Objective

The due date for submitting this assignment has passed. Due on 2020-04-08, 23:59 IST.
As per our records you have not submitted this assignment.

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

Consider a linear transformation $T : \mathbb{R}^3 \to \mathbb{R}^3$ defined as $T(x) = Ax$, for all $x \in \mathbb{R}^3$.
Then A is orthogonal if T is an isometry, but not conversely.

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

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

Let $A = \begin{bmatrix} u & v & w \end{bmatrix}$ be a 3×3 real orthogonal matrix, where $u, v, w \in \mathbb{R}^3$ are column vectors.
Then $u + v$ is orthogonal to $v + w$.

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

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

Let A be a 3×3 matrix such that $\det A > 0$. Then the linear map defined by A is an isometry.

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

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

There exists an even positive integer n and an $n \times n$ real symmetric matrix A such that A has only $n/2$ distinct eigenvalues.

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True