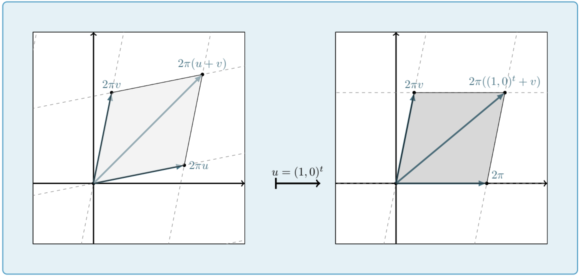
This is my quiz

A template for quizzes



Markus Tripp

February 25, 2024

Quiz 1

(Cancellability Rules)

Let A, B two $m \times n$ matrices and $x \in \mathbb{R}^n$ a vector such that

$$Ax = Bx$$

holds. This implies: $A = B$.

- Ⓐ True
- Ⓑ False

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- (A) True
- (B) False ✓

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Quiz 2

(Cancellability Rules)

Let A, B two $m \times n$ matrices such that for all vectors $x \in \mathbb{R}^n$

$$Ax = Bx$$

holds. This implies: $A = B$.

- (A) True
- (B) False

Quiz 2

(Cancellability Rules)

Let A, B two $m \times n$ matrices such that for all vectors $x \in \mathbb{R}^n$

$$Ax = Bx$$

holds. This implies: $A = B$.

Ⓐ True ✓

Ⓑ False

Quiz 3
(Vector Spaces)

Which of the following sets are vector spaces?

- Ⓐ $\{x = (x_1, x_2, x_3)^t \in \mathbb{R}^3 : \begin{pmatrix} 1 & 0 & 2 \end{pmatrix} x = 0\}$
- Ⓑ The set of solutions x of $Ax = 0$, where A is a $m \times n$ matrix
- Ⓒ The set of 2×2 matrices A with $\det A = 0$
- Ⓓ The set of polynomials $p(x)$ with $\int_{-1}^{1} p(x)\,\mathrm{d}x = 0$

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- B The set of solutions x of $Ax = 0$, where A is a $m \times n$ matrix ✓
- C The set of 2×2 matrices A with $\det A = 0$
- D The set of polynomials $p(x)$ with $\int_{-1}^{1} p(x)\, \mathrm{d}x = 0$ ✓

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Quiz 4

(Linear Independence)

Let V be a vector space over a field K, and let $A = \{v_1, \dots, v_k\} \subseteq V$. If there is **a** vector $v \in V$, which can be uniquely written as a linear combination of $v_1, \dots, v_k$, then A is linear independent.

- (A) True
- (B) False

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Ⓐ True ✓

Ⓑ False

$\rightsquigarrow$ Is also the converse true?

Improvements?

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Feel free to adapt/polish this template in any way you like. I am happy to discuss ideas and suggestions for general improvement of this template!

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