

Quiz_8_Solution

Wednesday, 20 March 2024 1:12 pm



NAME:
HABIB ID:

QUIZ 8 SOLUTIONS L1, L3, L5 (1:15 – 2:30) 5th Mar 2024

Question 01

No, the fact that all scalar multiples are included means that it has infinite vectors.

Question 02

Solution: Using Theorem 5.2.1

$u = (a, 1, 1)$ and $v = (b, 1, 1)$

$$u + v = (a, 1, 1) + (b, 1, 1) = (a + b, 2, 2) = (c, 2, 2)$$

Hence, it is not a vector space.

QUIZ 8 SOLUTIONS

L2, L4, L6 (3:30 – 4:45)
Tuesday 7th Mar 2024

Question 01

Yes, moon has to be the zero element because $\text{moon} + \text{moon} = \text{moon}$ means that 'moon' fulfills the definition of the additive identity.

Question 02



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Solution: Let $u = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$ and $v = \begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$, hence $\det(u) = \det(v) = 0$ but $\det(u + v) = 1$. Hence it is not a subspace.