

Quiz 12

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. (2 marks) §4.4 TF Determine whether the statement is true or false, and justify your answer.

If $V = \text{span}\{\vec{v}_1, \dots, \vec{v}_n\}$ then $\{\vec{v}_1, \dots, \vec{v}_n\}$ is a basis for V .

Question 2. (2 marks) §4.4 TF Determine whether the statement is true or false, and justify your answer.

Every linearly independent subset of a vector space V is a basis V .

Question 3. (2 marks) §4.4 TF Determine whether the statement is true or false, and justify your answer.

If $\{\vec{v}_1, \dots, \vec{v}_n\}$ is a basis for a vector space V , then every vector in V can be expressed as a linear combination of $\vec{v}_1, \dots, \vec{v}_n$.

Question 4. (4 marks) §4.5 TF Determine whether the statement is true or false, and justify your answer.

There is a basis for $\mathcal{M}_{2 \times 2}$ consisting of invertible matrices.