

Quiz 4

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

If A and B are invertible matrices of the same size, then AB is invertible and $(AB)^{-1} = A^{-1}B^{-1}$.

Question 2. §1.4 #TF (3 marks) Determine whether the statement is true or false, and justify your answer.

A square matrix containing a row or column of zeros cannot be invertible.

Question 3. §1.4 #TF (2 marks) Determine whether the statement is true or false, and justify your answer.

For all square matrices A and B of the same size it is true that $(A + B)^2 = A^2 + 2AB + B^2$.

Question 4. §1.4 #33 (2 marks) Simplify:

$$(AB)^{-1}(AC^{-1})(D^{-1}C^{-1})^{-1}D^{-1}$$