

MTH 207M

Quiz 2

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**Roll No:**

**Time:** 10 AM to 10:50 AM

**Name:**

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**Problem 1:** Consider the set  $\mathcal{S}$  of all  $2 \times 2$  real symmetric matrices. Find an orthonormal basis for the set  $\mathcal{S}$ . (4 Marks)

**Problem 2:** Find the projection of  $Y = \begin{bmatrix} 1 & 3 \\ 2 & 4 \end{bmatrix}$  on the set  $\mathcal{S}$ . (6 Marks)