MATB24. Quiz #6, TUT #12

(1) (4 point) In each part, give a complete definition, or mathematical characterization of the word in bold.

   (a) A **unitary matrix**

(2) (5 point) Give an example of the described object or explain why such an example does not exist.

   (a) A non-orthogonal linear transformation that takes an orthogonal basis to an orthogonal basis

(3) (6 point) Answer the following question:

   (a) Prove that if U is unitary then, U^T, $\overline{U}$ and U^* are unitary matrices also.