MATB24. Quiz #8, TUT #12

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

(a) A **normal matrix**

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

(a) A unitarily diagonalizable matrix which is also self-adjoint.

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

(a) Prove that if A is normal, then $||A\vec{z}|| = ||A^*\vec{z}||$ for all $\vec{z} \in \mathbb{C}^n$.