

309 Worksheet 8.3

True or False? Justify your answer:

In the following all matrices are $n \times n$ matrices.

(1) If \mathbb{R}^n has a basis of eigenvectors of a matrix A , then A is diagonalizable.

True — False?

REASON:

(2) A is diagonalizable if and only if A has n eigenvalues, counting multiplicities.

True — False?

REASON:

(3) If A is diagonalizable, then A is invertible.

True — False?

REASON:

(4) If A is diagonalizable, then A has n distinct eigenvalues.

True — False?

REASON:

(5) If A is invertible, then A is diagonalizable.

True — False?

REASON:

(6) If A is similar to a diagonalizable matrix B , then A is also diagonalizable.

True — False?

REASON: