

HOMEWORK ASSIGNMENT, APRIL. 25, 2011.

To be collected Friday, Apr. 29.

1. Ch. 7, # 2.1, 2.2.

2 (Extra credit). Are the matrices

$$\begin{pmatrix} 1 & 2 \\ 0 & 2 \end{pmatrix} \quad \text{and} \quad \begin{pmatrix} 1 & 0 \\ 2 & 2 \end{pmatrix}$$

unitarily equivalent or not?

They are definitely similar (can you say why?) and their Frobenius norms coincide, so there is no easy way to rule out unitary equivalence. But these fact still do not guarantee unitary equivalence.

**Hint:** Try to compare the angles between eigenvectors.