HW2 Solutions

Here are the solutions that I got when running through the problems.

FALL09 # 4

Your answers may be different depending on what you picked your eigenvectors to be.

$$P = \begin{pmatrix} 1 & 3 \\ 1 & 1 \end{pmatrix}, D = \begin{pmatrix} 1 & 0 \\ 0 & 3 \end{pmatrix}$$

FALL09 # 6

$$y = 16x^2 - 2x^4$$

FALL08 # 8

D

FALL08 # 11

Your answers may be different depending on what you picked your eigenvectors to be.

$$P = \begin{pmatrix} 1 & 1 \\ -1 & -2 \end{pmatrix}, D = \begin{pmatrix} 3 & 0 \\ 0 & 4 \end{pmatrix}$$

SPRING09 # 8

The only true ones are A and F.

FALL07 # 11

A

SPRING08 # 10

C

FALL06 # 4

C

SPRING07 # 2

Here's a hint. Use determinants and the fact that $\det(A) = \det(A^T)$.

SPRING07 # 14

H

SPRING04 # 6

$$\begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 \\ 3 \\ 1 \end{pmatrix}$$

FALL02 # 2

$$y = e^{-2x}(\cos 4x + \frac{1}{2}\sin 4x)$$

SPRING03 # 1

2 and 5 are the only defined things.