PURDUE UNIVERSITY · MA 26200
DIFFERENTIAL EQUATIONS AND LINEAR
ALGEBRA

QUIZ
Xinyu Liu
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Quiz 09

(2 points) The location of Exam 2 is _____.

The Characteristic Equation

(8 points) Find h in the matrix A below such that the eigenspace for $\lambda = 6$ is two-dimensional.

$$A = \begin{bmatrix} 6 & -2 & 8 & -7 \\ 0 & 4 & h & 0 \\ 0 & 0 & 6 & 5 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

The value of h is $h =$ _____. (**No partial credits**)

Homogeneous Linear Equations

(10 points) Find a solution to the initial value problem

$$y'' + 4y' + 4y = 0; \qquad y(0) = 1, \qquad y'(0) = 3.$$

(**No credits** for the answer without necessary explanation.)

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Special number: _____   Name: _____
Section Number: _____   PUID: _____