

Math 231, Introduction to Differential Equations, Fall 2011

Queen's University, Department of Mathematics

Tutorial , Monday, November 21

Discuss the fundamental matrix solution e^{At} , phase plane solutions, and stability for each matrix system

$$x' = \begin{pmatrix} 2 & -1 \\ 3 & -2 \end{pmatrix} x$$

2.

$$x' = \begin{pmatrix} 1 & -4 \\ 4 & -7 \end{pmatrix} x$$

3.

$$x' = \begin{pmatrix} 1 & -5 \\ 1 & -3 \end{pmatrix} x$$

4.

$$x' = \begin{pmatrix} 2 & -5 \\ 1 & -2 \end{pmatrix} x$$

5.

$$x' = \begin{pmatrix} 2 & \frac{-5}{2} \\ \frac{9}{5} & -1 \end{pmatrix} x$$