

2x2 matrices and vectors: p. 1, 2 of my 2x2systems.pdf notes

(page numbers refer to .pdf pages, not my scribbles at the top of the page.)

linear 2x2 systems of algebraic equations, p. 3, 4, 5, 6 of my 2x2systems.pdf notes

eigenvalues and eigenvectors, p. 7-10 of my 2x2systems.pdf notes, also used in problems 101-109

2x2 systems of linear 1st order differential equations with constant coefficients: p 11-32 of the notes, problems 101-109, problem 8 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de08test3sols.pdf>

problem 10 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de09test3sols.pdf>

general solutions for distinct real eigenvalues and for complex-conjugate eigenvalues: p 11-32 of the notes, problems 101-109

problem 10 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de08test3sols.pdf>

problem 11 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de09test3sols.pdf>

particular solutions for given initial points:

problem 9 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de08test3sols.pdf>

problem 12 here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de09test3sols.pdf>

plotting trajectories (phase portraits) in the phase plane, sources, sinks, saddles, centers, spiral sources, spiral sinks, stability type,

p 11-42 of the notes, problems 101-109

the last problems here

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de08test3sols.pdf>

<http://eaton.math.rpi.edu/Faculty/Cheney/diffeq/detests/de09test3sols.pdf>

equilibrium points of nonlinear 2×2 systems of differential equations, linearization, local phase portraits near equilibrium points, competing species, predator-prey systems.

p 43-61 of the notes, problems 110-115