

The following exercises are from the corresponding sections of the UC Berkeley custom edition of Lay, Nagle, Saff, & Snider, Linear Algebra and Differential Equations. Note that the section numbers and problem numbers ARE NOT the same as in Lay, Linear Algebra.

Exercises 7.1: 23, 27, 29, 32, 35, 36

Exercises 4.2*: 7, 11, 15, 26, 30, 34bc, 36, 46

Exercises 4.3*: 9, 11, 21, 28, 36, 38

*: These are from part 2 of the book – these are problems on differential equations!

Additional Problems:

1. If the roots of the characteristic equation are real, show that a non-zero solution to $ay'' + by' + cy = 0$ can take the value 0 at most once, i.e., if $y(t)$ is a non-zero solution, there is at most one point $t_0 \in (-\infty, \infty)$ such that $y(t_0) = 0$.