

MATH 2610 - STUDY GUIDE FOR TEST 3

VANDERBILT UNIVERSITY

- (1) The following formula, and only this formula, will be provided in the test. If

$$(x, y) = c_1u + c_2v,$$

where $u = (u_1, u_2)$ and $v = (v_1, v_2)$ are linearly independent vectors, then

$$c_1 = \frac{v_2x_0 - v_1y_0}{u_1v_2 - v_1u_2}, c_2 = \frac{-u_2x_0 + u_1y_0}{u_1v_2 - v_1u_2}.$$

- (2) The test will cover sections 12.1, 12.2, 12.3, 12.4, 12.5, and 12.6, and only these sections. Nevertheless, the content of these sections builds on material from previous sections (e.g., the behavior of solutions to linear systems depending on their eigenvalues), and in these cases you need to master such background material as well.
- (3) There will be no complicated algebra or complicated integral to be performed in the test.
- (4) Understand the examples and proofs worked out in class.
- (5) Understand the practice test. Review HW questions that are similar to questions of the practice test.
- (6) You need to know the $\epsilon - \delta$ definitions and proofs from class, the HW, and the practice test.
- (7) While you need to know the concepts of stability, asymptotic stability, and instability, you will not be asked to classify critical points according to terminology “node,” “improper node,” etc.