

Math 341 Homework # 6

Due Wednesday Oct. 16 in class.

Section 3.3 # 1,4,9,14,17,19,23,25

Section 3.5 # 1,6,14,16,21,26

Problem: Suppose $y_1(t) = \sin^2(t)$. Show that $y_1(t)$ cannot satisfy a linear equation of the form

$$y'' + p(t)y' + q(t)y = 0$$

with $p(t), q(t)$ continuous in an open interval I which contains $t = 0$.

Hint: What are $y_1(0), y_1'(0)$? Use the uniqueness theorem 3.2.1.

Additional Exercises for Graduate Students taking for 1 credit

Section 3.3 # 27,27,28

Section 3.5 # 29,30,35,38,39,40