

MA166: Recitation 12

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1 Homework

1.1 This Week's Summary

Here's a summary of the material that was (presumably) covered this week. Sections from Stewart

§10.1: Parametric Equations and Polar Coordinates

Suppose that x and y are defined in terms of another third variable t (called the *parameter*) by the equations

$$x = f(t) \quad y = g(t).$$

(called *parametric equations*). Each value of t determines a point (x, y) which we can plot in the coordinate plane \mathbb{R}^2 . As t varies, the point $(x, y) = (f(t), g(t))$ varies and traces out a curve C , which we call the *parametric curve*. The parameter f does not necessarily represent time, and in fact,

1.2 Homework Problems

Solutions to selected problems:

Homework 31

Problem 1 (WebAssign HW 31, # 1). Select the curve generated by the parametric equations. Indicate with an arrow the direction in which the curve is traced as t increases.

$$x = e^{-t} + t, \quad y = e^t - t, \quad -2 \leq t \leq 2.$$

Problem 2 (WebAssign HW 31, # 2).

Problem 3 (WebAssign HW 31, # 3).

Problem 4 (WebAssign HW 31, # 4).

Problem 5 (WebAssign HW 31, # 5).

Problem 6 (WebAssign HW 31, # 6).

Problem 7 (WebAssign HW 31, # 7).

Problem 8 (WebAssign HW 31, # 8).

Problem 9 (WebAssign HW 31, # 9).

Problem 10 (WebAssign HW 31, # 10).

Homework 32

- Problem 11** (WebAssign HW 32, # 1).
- Problem 12** (WebAssign HW 32, # 2).
- Problem 13** (WebAssign HW 32, # 3).
- Problem 14** (WebAssign HW 32, # 4).
- Problem 15** (WebAssign HW 32, # 5).
- Problem 16** (WebAssign HW 32, # 6).
- Problem 17** (WebAssign HW 32, # 7).
- Problem 18** (WebAssign HW 32, # 8).
- Problem 19** (WebAssign HW 32, # 9).
- Problem 20** (WebAssign HW 32, # 10).

Homework 33

- Problem 21** (WebAssign HW 33, # 1).
- Problem 22** (WebAssign HW 33, # 2).
- Problem 23** (WebAssign HW 33, # 3).
- Problem 24** (WebAssign HW 33, # 4).
- Problem 25** (WebAssign HW 33, # 5).
- Problem 26** (WebAssign HW 33, # 6).
- Problem 27** (WebAssign HW 33, # 7).
- Problem 28** (WebAssign HW 33, # 8).
- Problem 29** (WebAssign HW 33, # 9).
- Problem 30** (WebAssign HW 33, # 10).