

Daily Prep Assignment for April 6th

Overview

To prepare for class

Preview activities: Read the example preview activity solution on the course website then,

- Preview activity 11.9.1

Reading:

- Read section 11.9

Watching: Watch these additional resources if you need support reading the text.

1. Overview 11.9: <https://youtu.be/fsXgkMK-MAA>

During and after class

- Activity 11.9.2
- Activity 11.9.3
- Activity 11.9.4
- Activity 11.9.5
- Activity 11.9.6
- The goal of this question is to give you a chance to think conceptually and creatively about the Jacobian and what it really means. It also is a handy trick that makes computations easier for many change of variable problems.

In activity 11.9.3 you computed the Jacobian $\left| \frac{\partial(x,y)}{\partial(r,\theta)} \right|$. For this problem I would like you to compute $\left| \frac{\partial(r,\theta)}{\partial(x,y)} \right|$ but without taking any derivatives or computing any determinants. I know this is a bit vague, but think about what the Jacobian means and other ways you might be able to find it from things you already know.