Things to Review from chapter 10: Math 3c

This review sheet is a list of important topics you should be sure to study/skills you should practice. It is not a comprehensive list of all the types of problems that can test these skills; be sure you have completed the homework in addition to reviewing this list.

Section 10.1:

- Know how to sketch a parametric curve, including the orientation. In particular, know how to sketch a curve by eliminating the parameter.
- Be able to move back and forth between parametric equations for a curve and the related vector-valued function.
- Given a parametric curve, be able to find a formula for \( \frac{dy}{dx} \) and \( \frac{d^2y}{dx^2} \) in terms of the parameter, \( t \).
- Be able to find the arc length of a parametric curve.

Section 10.3:

- Given a polar curve, be able to find the associated parametric curve.
- Given a polar curve, be able to find a formula for \( \frac{dy}{dx} \) and \( \frac{d^2y}{dx^2} \) in terms of \( \theta \).
- Be able to find the arc length of a polar curve.
- Be able to derive the formula for arc length of a polar curve from the formula for arc length of a parametric curve in rectangular coordinates.