# MATH 1953 Exam 1 Topics List/Study Guide

Here is a list of topics that can appear on Exam 1.

- 10.1: Know what a parametrically defined function is and how to graph one, either via table of values or by eliminating the parameter.

- 10.2: Know how to find dy/dx for parametric curves and use this to solve associated tangent line problems.

- 10.2: Know how to find the area between a parametric curve and the $x$-axis.

- 10.2: Know how to find the arclength of a parametric curve.

- 10.3: Know what polar coordinates are, and how to graph a function defined by a polar equation.

- 10.3: Know how to find dy/dx for polar curves and use this to solve associated tangent line problems.

- 10.4: Know how to find area for polar curves; this includes both "simple" area problems, where you just find the area "inside" a curve (i.e. between the curve and the origin), and more complicated area problems, for instance finding the area inside one curve and outside another.

- 10.4: Know how to find arclength for polar curves.

- 4.4: Know how to apply L'Hospital's rule to find limits of certain fractions, products, differences, and exponentials.