

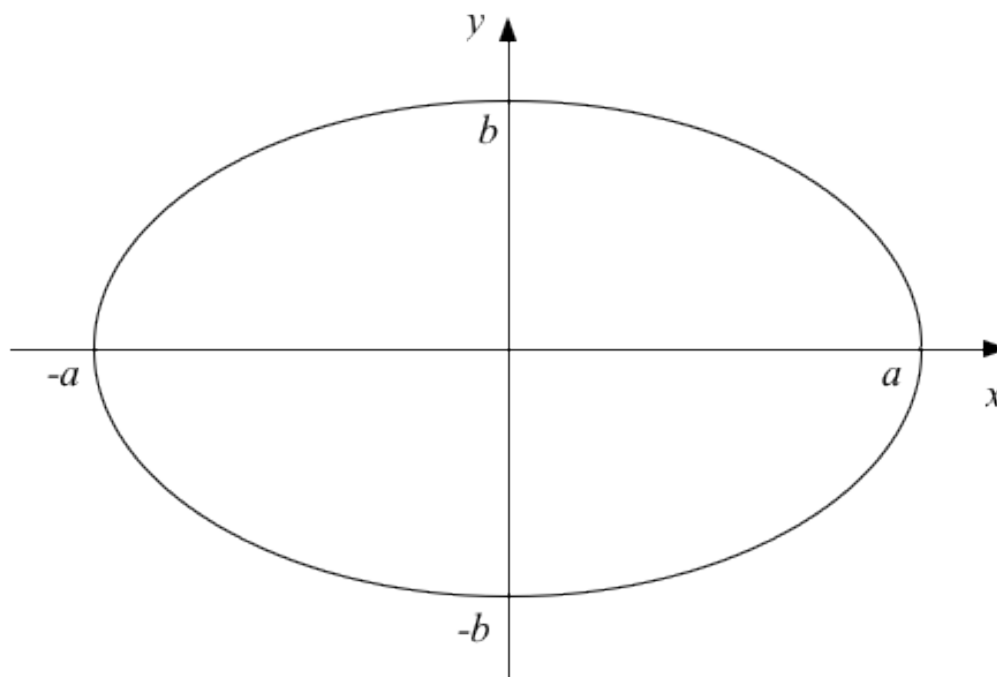
Mathematics 1100Y – Calculus I: Calculus of one variable  
TRENT UNIVERSITY, Summer 2010

Assignment #7

○ → ...

Due on Wednesday, 23 June, 2010.

An ellipse in standard position has an equation of the form  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ .



1. Find the area of the enclosed by the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  using calculus. [8]
2. Find the area of the enclosed by the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$  without using calculus. [2]  
*Hint:* Distort the unit circle  $x^2 + y^2 = 1$  into the ellipse. How does the distortion affect areas?