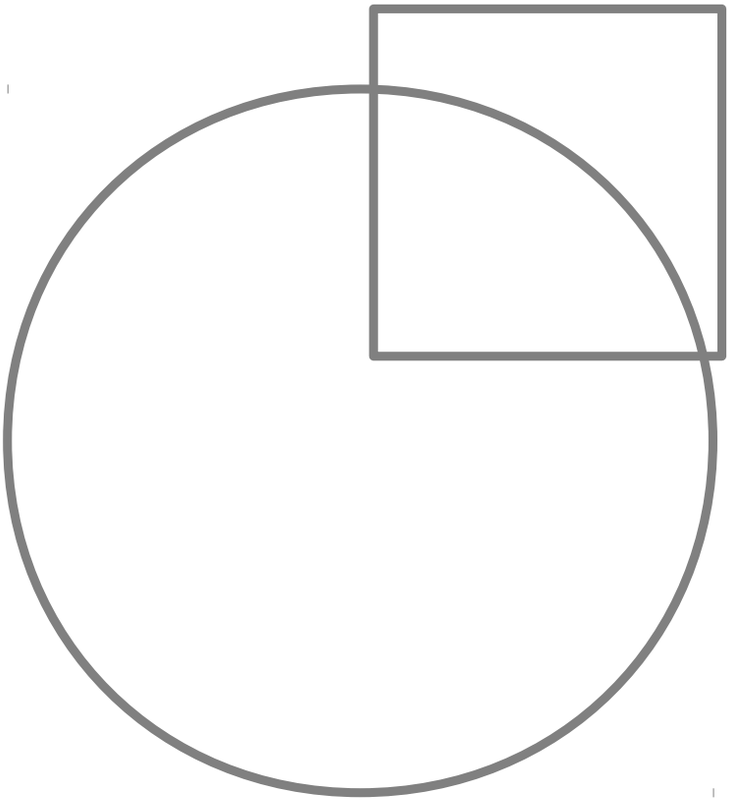
Mathematics 1100Y – Calculus I: Calculus of one variable
TRENT UNIVERSITY, Summer 2012

Assignment #8
Circling half a square
Due on Wednesday, 11 July, 2012.



1. A square with sides of length 4 is moved into a circle of radius 4 so that one side of the square slides along a radius of the circle until exactly half the area of the square is inside the circle. How far is the corner of the square inside the circle from the centre of the circle at this point? (Give a number!) *[10]*

HINT: Set up an integral equation for the overlapping area that has the desired distance as an unknown constant, then use `Maple` to solve the equation for that constant. You may want to look up `Maple`' `int`s operator and the `fsolve` command, though there are other ways to get `Maple` to do the job.