Problem of the Month #1

November 2010

Open to all students whose mathematics classes come solely from the following list: Math 92, Math 155, Math 161, Math 162, Math 163, Math 165, Math 167, Math 168, Math 185, Math 241, or Math 267 or their equivalent

Directions: Write a complete solution to the problem below showing all work. Your paper must have your name, W #, and Southeastern email address. Solutions are to be placed in the envelope for Problem #1 located in the Department of Mathematics Office, Fayard 308 by 4:00 p.m., Tuesday, November 30. No late papers will be accepted.

All papers with a correct solution will be entered in a drawing for a great prize!

Questions concerning the problem of the month should be sent to either Dr. Tilak de Alwis (tdealwis@selu.edu), or Dr. Randy Wills (rwills@selu.edu)

Problem:
The slope of the line tangent to the graph of \( y = \frac{1}{x} \) at \( x = a \), where \( a \) is a non-zero real number, is given by \( m = -\frac{1}{a^2} \). Find the area of the triangle formed by the tangent line, the \( x \)-axis and the \( y \)-axis.