

# PROBLEM OF THE MONTH #1

SEPTEMBER 2014

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 177, Math 287, Math 185, Math 241, or Math 277 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 4:30 p.m., **Tuesday, September 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](mailto:tdealwis@selu.edu)), or Dr. Randy Wills ([rwills@selu.edu](mailto:rwills@selu.edu))

## **Problem :** *Coins Touching Each Other*

Three coins of equal size are stacked inside an equilateral triangle of side-length 1 unit in the following manner: The coins are touching each other, and each side of the triangle is touching exactly two coins, as given in the diagram below. Find the area of the region  $R$  enclosed by the three coins. Provide the exact answer with a rational denominator.

