

# PROBLEM OF THE MONTH #2

SEPTEMBER 2014

**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 #2 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: *Triangles and Distances*

Consider the triangle whose vertices are at  $(0,0)$ ,  $(2, 2)$ , and  $(-2, 2)$ . Let  $C$  be the set of all points which are inside the triangle with the property that the distance from  $(0, 0)$  to a point  $(x, y)$  on  $C$  is equal to the distance from  $(x, y)$  to the line  $y = 2$ . Find the area of the shaded region  $R$  in the diagram below.

