

PROBLEM OF THE MONTH #2

MARCH 2019

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., **Thursday, March 28**. 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. Dennis Merino (dmerino@selu.edu)

Problem: *Tangents, Implicit Differentiation and Geometry*

Two tangent lines are drawn from the point $P(-2(1 + \sqrt{3}), 2(1 + \sqrt{3}))$ to the circle $x^2 + y^2 = 4$, touching the circle at the points Q and R . Find the exact value of the angle QPR . A diagram, while not drawn to the scale, is provided below as a hint.

