

DEPARTMENT OF MATHEMATICS  
2016 SPRING SEMINAR

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***“A Deeper Look at a Related Rate Activity”***

Abstract:

One of the focal points for NSF-funded Calculus redesign at Fresno State is to include more active learning in the classroom. This talk explores a Math 75 activity which involves coffee being poured at a constant rate into four different shaped cups. The activity asks students, working in groups, to produce sketches of graphs of the depth of coffee in a cup,  $h(t)$ , as a function of time  $t$ ; and of the rate of change of depth,  $dh/dt$ , verses time  $t$ . Here we examine several of the cup shapes and the solutions students often produce, and explain why the solutions are problematical for some of the cups, yet also very instructive potentially for students or prospective teachers when looking deeper into the oftentimes usual underlying assumptions.

**Friday, April 8, 2016**  
**PB 136**  
**12:00PM – 1:00PM**