

1116-VR-708 **Lance Burger*** (lburger@csufresno.edu) and **Marat Markin**. *On the Teaching of Calculus: A Deeper Look at a Derivative Sketching Activity*. Preliminary report.

One of the focal points for NSF-funded Calculus redesign at Fresno State is to include more active learning in the classroom. This paper resulted from discussions in our redesign group while working through an activity used at Colorado University, which involved coffee being poured at a constant rate into four different shaped cups. This 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 two of the cup shapes and the solutions provided to us 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. (Received September 10, 2015)