Calculus Lab: Maximal Cones

6 November 2012

Work in groups of two or three. I recommend doing this by hand until the last step, when you actually have to take a derivative, set it equal to zero, and solve for θ.

Hand this in as part of homework assignment 7.

You have a paper plate with a diameter of 6 inches. You wish to turn it into a conical container that could be used to hold stuff, such as candy corn. Since you like candy corn, your goal is to have the cone have as large a volume as possible.

To turn the paper plate into a cone, cut a wedge out of the circular plate. Remove the wedge and join the edges with a piece of tape. You will then have a cone.

What angle wedge should you cut out of the paper plate to maximize the volume of the cone?