POW #5

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Geometry

For this POW, we were asked to find the ideal soda can size that holds 355mls (12 ounces) but with the least surface area possible. To start off with this POW I started by looking at the soda can and thinking, "Are the soda cans that are already out there the ideal size, or are they not?" At first I was really confused on how to solve it. I was stuck till we did a couple of the in class activities that were supposed to help us. I then realized that I could use a table to find the correct answer. So I started by taking what I know already, which is the 355ml, and I know that to figure out the minimal surface area possible I would have to take two pi times radius squared plus two pi times radius times height. I then can then use this formula to find the minimal surface area possible. After I did calculations the minimal surface area that I found was 49.8797cm. I used one website to find the formula for surface area.

Radius= 3.84

Height= 7.66719
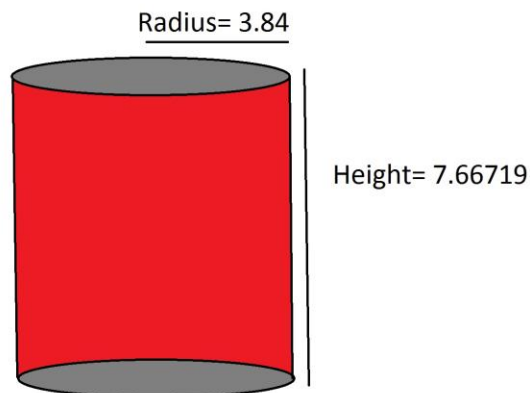
As you can see here this diagram shows what I think the ideal soda can size is. I think I am correct because I used a chart to find what I think is the least amount of surface area possible. I think this is because it is smaller than the soda cans that are out now. The size that is out there now is 4.83 high and 2.60 in diameter. This POW actually made me think about it. It was a cool POW it made me try lots of different things to get the answer. It helped me because it made me use a chart to figure out the answer, I needed that because I don't really use charts all that much but this helped me to realize that it is really helpful to list, and have all the data right in front of you. Over all I think I deserve 20-25 because I think I got the right answer I have a process and compared my data to what is already out there.

Diameter	7.671	7.672	7.673	7.674	7.675	7.676	7.677	7.678
height	7.68519216	7.683188848	7.681186	7.679185	7.677184	7.675183	7.673184	7.671185
Volume	355	355	355	355	355	355	355	355
Radius	3.8355	3.836	3.8365	3.837	3.8375	3.838	3.8385	3.839
Surface area	185.112762	185.088634	185.0645	185.0404	185.0163	184.9922	184.9681	184.944
circle surface	46.1927292	46.20477344	46.21682	46.22887	46.24092	46.25297	46.26502	46.27707
total surface	277.498221	277.4981809	277.4982	277.4981	277.4981	277.4981	277.4981	277.4981

http://www.math.com/tables/geometry/surfareas.htm