STEM Math - The Cereal Box Problem

You are a design engineer employed by the CMR Foods Corporation. The company is introducing a new breakfast cereal which has been clinically proven to improve mathematical logic and reasoning skills and provide 100% of the required daily amount of vitamins and minerals necessary to build strong bodies and healthy minds in twelve different ways. The product will be called “Pythagoros" in honor of the famous Greek Mathematician Pythagoras.

Here is your task: You and your co-workers are asked to each create and design the new package for this amazing cereal at the most cost-effective design; that is, a package that utilizes the *least* amount of surface area and holds a specific amount of product in volume.

Using your prior knowledge of surface area and volume of polyhedrons, pyramids, cylinders, cones, and spheres**,** design and create a container for this new product, which has a volume of 540 cubic centimeters and has the smallest possible surface area possible. Your drawings should be presented by (INSERT DAY) for approval, with your final product due on (INSERT DATE , 2016). Keep in mind that designers and engineers are given tight time frames in which to complete a project.

You will be provided with a rubric to guide you through the process. Attention to *detail and creativity* are worth bonus points as well. **GOOD LUCK**!

Cereal Box Problem

Rubric

Scoring Criteria	**Possible points**	**Your score**
Project **on time**	10	
Total volume = 540 $\boldsymbol{cm^3}$ (based on dimensions noted)	30	
Surface Area meets criteria of *least* amount of surface area for volume of 540 $\boldsymbol{cm^3}$	30	
Package made from **recycled** material	10	
Name of cereal **spelled correctly**	5	
Package **colorful** and attractive to middle school students	10	
Surface area and volume answers are **labeled correctly**	5	

The dimensions of my project are as follows:

_____

The cereal box has a surface area of:_____

The cereal box has a volume of : _____