People who live in isolated or rural areas have their own tanks of natural gas to run appliances like stoves, washers, and water heaters.

These tanks are made in the shape of a cylinder with hemispheres on the ends. The Summit Propane Tank Company makes a standard tank with a cylinder that is 10 feet long. The standard tank’s diameter is 6 ft.

The company wants to explore options to double the capacity of the standard tank. However, they are undecided regarding the best option:

1. Keep the standard end caps the same and lengthen the cylinder.
2. Keep the length of the cylinder the same and change the radius of the end caps.
3. Create an entirely new propane tank whose dimensions are proportioned so that it is similar to the standard tank (i.e change the length of the cylinder and the radius of the hemisphere).

The Summit Propane hired our consulting firm to help them make the decision. **For each option, find the dimensions of the double-the-volume propane tank and the amount of steel required to make it.** Then, make a proposal to Summit Propane regarding which option they should choose. Please be sure to show all of your decision-making process.

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Endcap radius =

Length of cylinder =

Amount of steel =

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