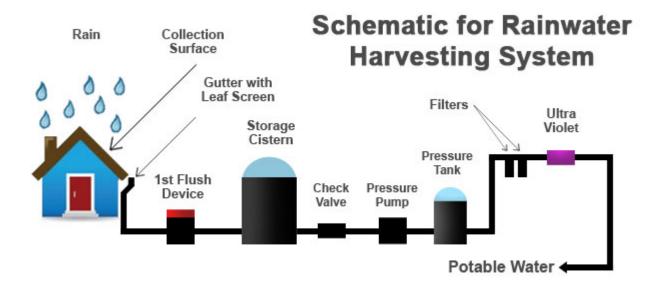
ENGR 1201 - Introduction to Engineering

Renewable Energy Problem #4



Leannah and Steven are planning to install a rainwater harvesting system for their home. They are constructing a new 20-foot gutter to collect the rainwater from their roof. The gutter will be formed from a 10-inch wide flat strip of aluminum, 20-feet long, by bending up the sides at a 90-degree angle from the bottom to form a "U" shape that is 20 feet long.

- 1. Determine the dimensions of the sides and bottom that will maximize the volume of rainwater in the gutter.
- 2. Calculate the volume of water when the 20-foot gutter is completely full.
 - a. Provide your answer in cubic inches.
 - a. Provide your answer in gallons. Round to the nearest gallon.