

NAME:

PROBLEM SOLVING

Solve each problem by answering the following

1. ASKED
2. GIVEN
3. SOLUTION
4. FINAL ANSWER

1. A community wants to install a large cylindrical water tank to collect rainwater for the dry season. The space they have chosen can fit a tank with a diameter of 4 meters, and they plan to build it 5 meters tall. How many cubic meters of water can this tank hold?

2. A food manufacturing company is redesigning the packaging for their best-selling tomato soup to reduce metal waste. The new cylindrical can has a radius of 3.5 cm and a height of 10.5 cm. What is the exact volume of soup that can fit inside a single can?

3. A large cylindrical water tank is used to store water for a barangay. The tank can hold 1,256 m^3 of water. The radius of the tank is 8 meters. What is the height of the tank?

4. A farmer is designing a new cylindrical grain silo for their property. The silo must be able to hold exactly 1,500 m^3 of harvested corn. However, local zoning laws strictly limit the maximum height of any agricultural structure to 15 meters. To maximize capacity while staying within the height limit, what must the radius of the silo be?

5. A product designer is creating a new stainless steel travel thermos. It needs to hold exactly 750 cm^3 (which equals 750 milliliters) of liquid. To ensure it fits into standard car cup holders, the thermos is designed with a diameter of 8 cm. What is the minimum interior height the thermos must be to hold exactly 750 cm^3 of coffee?