Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_ Score:\_\_\_\_\_

### U13 HW #4 *Volume of Cylinders, Cones, and Spheres*

*Task 1: Ice Cream -* Izzi’s Ice Cream Shoppe is about to advertise giant spherical scoops of ice cream 8 cm in diameter! Izzi wants to be sure there is enough ice cream and wonders how many scoops can be obtained from each cylindrical container of ice cream. The containers are 20 cm in diameter and 26 cm tall.

1. Draw and label a picture of the ice cream containers and the scoop of ice cream.
2. Determine the number of scoops of ice cream one container will give her?
3. Ingrid purchases one of these famous giant scoops of ice cream but does not get to it fast enough and the ice cream melts! The radius of the cone and the ice cream (sphere) is 4 cm and the height of the cone is 10 cm. Will all of the melted ice cream fit inside the cone?
4. If it does fit, how much more ice cream will fit in the cone? If it doesn’t fit, how many cubic centimeters of ice cream does she need to eat before it melts in order to make it fit?

**Note**: Be sure to answer ALL the questions in the tasks.

*Task 2: Containers -* A cylindrical glass 7 cm in diameter and 10 *cm* tall is filled with water to a height of 9 cm. If a ball 5 cm in diameter is dropped into the class and sinks to the bottom, will the water in the glass overflow? If it does overflow, how much water will be lost? Explain and justify your response.

*Task 3: Vases -* Kauri pours the water out of a cylindrical flower vase with a height of 5 inches and a radius of 4 inches into a spherical flower vase. The spherical vase has a radius of 4 inches. Will the water overflow? If so, by how much? If not, how much space is left in the spherical vase?