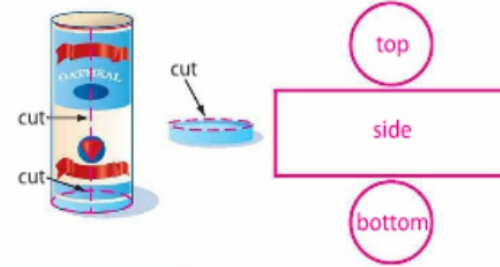


**Step 1**

Use an empty cylinder shaped container that has a lid.  
 What is the height of the container? **See students' work.**

**Step 2**

Take off the lid of the container and make 2 cuts as shown. Cut off the sides of the lid. Lay the lid, the curved side, and the bottom flat to form the net of the container. Sketch and label the parts of the net.



What are the shapes that make up the net of the container? **2 circles and a rectangle**

**Step 3**

Make a mark on the top of the lid. Place the mark at the top edge of the flattened curved side as shown. Roll the lid along the edge of the side until it completes one rotation.



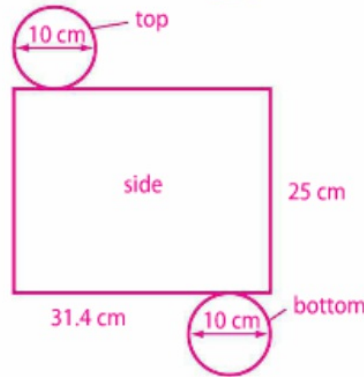
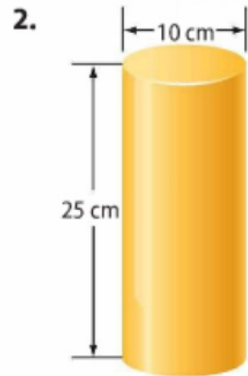
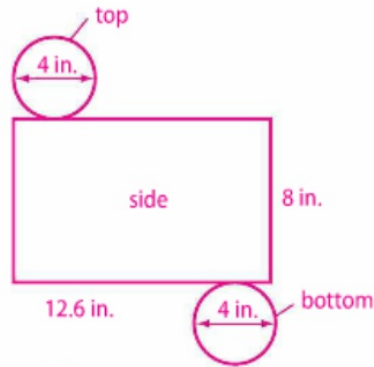
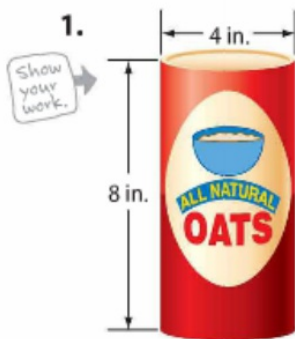
Where does the lid stop? **at the other edge of the curved side**

How does the length of the curved side compare to the distance around the top? **They are the same.**

Find the area of each shape. **See students' work.**

Top \_\_\_\_\_ Bottom \_\_\_\_\_ Side \_\_\_\_\_

Work with a partner. Draw the net and label the parts of the cylinder and the measurements. Then complete the table to find the *total surface areas* for Exercises 1 and 2. Round to the nearest tenth.



	Area of top ( $\pi r^2$ )	Area of bottom ( $\pi r^2$ )	Curved Area	Total Surface Area
3.	12.6 in <sup>2</sup>	12.6 in <sup>2</sup>	100.8 in <sup>2</sup>	126 in <sup>2</sup>
4.	78.5 cm <sup>2</sup>	78.5 cm <sup>2</sup>	785 cm <sup>2</sup>	942 cm <sup>2</sup>



Analyze and De







## Analyze and Reflect

5. What is the total surface area of the container described at the beginning of the lesson? Round to the nearest tenth. 2,513.3 cm<sup>2</sup>



## Create

6.  **Reason Inductively** Describe how to find the area of the curved surface of a cylinder. Sample answer: Calculate the circumference of one circular base. This is the length of the rectangle of the curved surface. Multiply that value by the height of the cylinder.
7.  How can the surface area of a cylinder be determined?  
Sample answer: Calculate the area of one circular base then multiply this by 2 since there are two bases. Add the area of the curved side.