

**Surface Area Word Problems:**

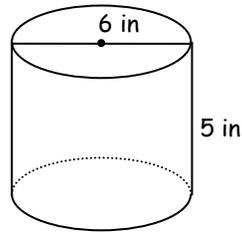
Name: \_\_\_\_\_

<p>1.) A cosmetics company that makes small cylindrical bars of soap wraps the bars in plastic prior to shipping. Find the surface area of a bar of soap if the diameter is 5 cm and the height is 2 cm. Use 3.14 for <math>\pi</math>.</p>	<p>2.) Chloe wants to wrap a present in a box for Sarah. The top and bottom of the box is 8 in. by 3 in., the sides are both 3 in. by 2 in. and the front and back are 8 in. by 2 in. How much wrapping paper will Chloe need to wrap the present?</p>
<p>3.) The lateral area of a cylinder is <math>94.2 \text{ cm}^2</math>. The height is 6 cm. What is the radius?</p>	<p>4.) Tara made a rectangular fence around her rose so it would not get hurt by her dog. She put a fence around the rose that was 4 ft long, 2 ft wide, and 3 ft high. How much material did she use to make her fence?</p>
<p>5.) A company is deciding which box to use for their merchandise. The first box measures 8 inches by 6.25 inches by 10.5 inches. The second box measures 9 inches by 5.5 inches by 11.75 inches. Which box required more material to make?</p>	<p>6.) If each box (from #5) used material that cost \$0.03 per square inch to make, how much does a company save by choosing to make fifty boxes of the smaller box in comparison to fifty boxes of the larger box?</p>

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7.) Mary wants to make several cans like the one below. She is going to cut them from a sheet of metal that has an area of  $3,750 \text{ in}^2$ . How many can she make? Use 3.14 for  $\pi$ .



8.) Trey and Matt each have a rectangular prism. The base of Trey's prism is 4 cm by 7 cm and has a height of 12 cm. The base of Matt's prism is 6 cm by 10 cm and has a height of 3 cm. Whose rectangular prism will require more material to construct?

9.) A library has an aquarium in the shape of a rectangular prism. The base is 6 ft by 2.5 ft. The height is 4 ft. How many square feet of glass was used to build the aquarium?

10.) Marley bakes a rectangular cake that is 9 inches wide, 13 inches long and 2 inches high. She removes the cake from the pan to frost it. How many square inches of frosting does she need?

11.) Campbell Soup is creating a new soup label. If a can has a height of 6 in and a diameter of 4 in, how much material does Campbell need for each soup label?

12.) Diana wants to make several cans with a diameter of 6 inches and a height of 8 inches. She is going to cut the cans from a sheet of metal that has an area of  $2,675 \text{ in}^2$ . How many can she make?

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13.) Mrs. Amrhein made a cylindrical pencil holder. It has a height of 5 in and a diameter of 3 in. How much material does she need to make her pencil holder?

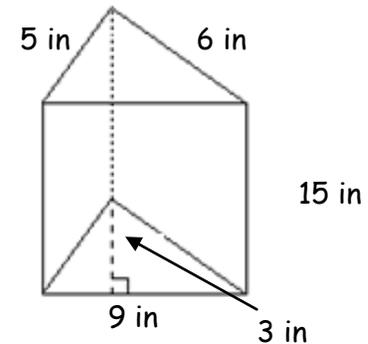
14.) Grete opens and lays a shoe box out flat. She sees that the top and the bottom of the box both measure 10 inches by 6 inches, the sides of the box both measure 10 inches by 2 inches, and the front and back of the box both measure 6 inches by 2 inches. What is the surface area of the shoe box?

15a.) You are painting a room that is 18 ft long, 14 ft wide and 8 ft high. Find the area of the four walls that you are going to paint.

15b.) If the paint costs \$6.50 a gallon and each gallon covers  $128 \text{ ft}^2$  of wall, how much will it cost to paint the room?

16.) Kaitlyn bakes two rectangular cakes to put on top of each other. Each cake is 6 inches wide, 12 inches long and 3 inches high. She removes the cake from the pan to frost it. How many square inches of frosting does she need for both cakes?

17.) Solve:



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18.) Nam and Brandon each have a cylindrical canister of Pringles. Nam's cylinder has a diameter of 7 inches and a height of 13 inches. Brandon's cylinder has a diameter of 5 inches and a height of 20 inches. Whose cylinder has a larger surface area?

19.) A gymnasium is 45 ft long, 30 ft wide, and 14 ft high. The school is painting the four walls and the ceiling of the gym. Find the area of the painted parts of the gym.

20.) Use #18 to then find how much it costs to paint the room if the paint costs \$8 a gallon and each gallon covers 300 ft of wall.

21.) Tommy and Ethan each have a cylinder. Tommy's cylinder has a diameter of 6 inches and a height of 8 inches. Ethan's cylinder has a diameter of 8 inches and a height of 6 inches. Whose cylinder has a larger surface area? Use 3.14 for  $\pi$ .

22.) Clayton wants to make a cylindrical case that will fit a bass drum with a height of 14 in. and a diameter of 24 in. What is the surface area of the case? Use 3.14 for  $\pi$ .

23.) **\*\*Challenge\*\*** Must try!  
If the lateral area of this shape is  $54\text{in}^2$ , what is the value of  $x$ ?

