

# Chapter 2 Review

## Learning Goals

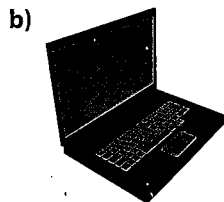
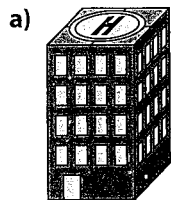
**Inquire and Explore:** How can you determine the surface area of a regular solid?  
 How can you use different views or nets of objects to determine the surface area?  
 Why would you need to know the surface area of an object in everyday life?

After this section, I can

2.1	<ul style="list-style-type: none"> <li>visualize and describe the views of 3-D objects using mathematical vocabulary</li> <li>draw and label top, front, and side views of 3-D objects</li> <li>build and sketch 3-D objects when given top, front, and side views</li> </ul>
2.2	<ul style="list-style-type: none"> <li>use reason and logic to determine the correct nets for 3-D objects</li> <li>visualize and build 3-D objects from nets</li> <li>visualize and draw nets for 3-D objects</li> </ul>
2.3	<ul style="list-style-type: none"> <li>connect area to surface area</li> <li>use multiple strategies to determine the surface area of a right prism</li> </ul>
2.4	<ul style="list-style-type: none"> <li>use multiple strategies to determine the surface area of a cylinder</li> </ul>

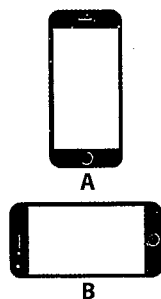
### 2.1 Views of 3-D Objects, pages 38–43

1. Draw and label the top, front, and side views for these objects.

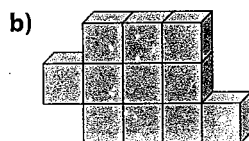
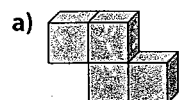


2. The cellphone below shows two ways to hold the screen.

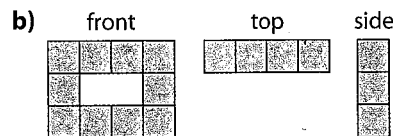
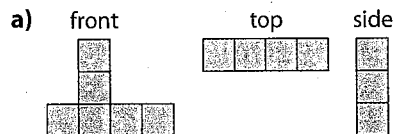
- a) Draw the top, front, and side views of each.  
 b) What are some of the similarities and differences between the views you drew?



3. Use grid paper to draw the top, front, and side views of each object.

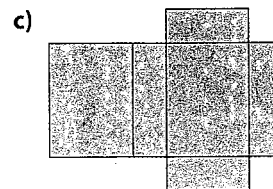
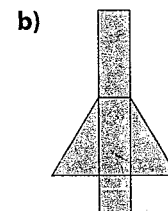
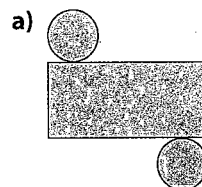


4. Using isometric dot paper, draw each 3-D object from the views given.

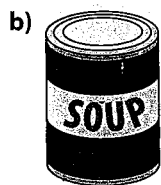
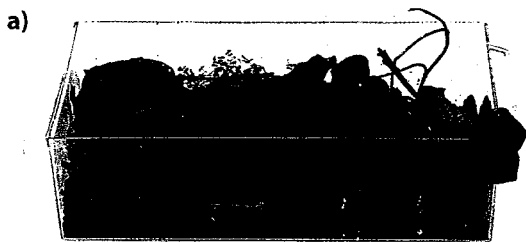


### 2.2 Nets of 3-D Objects, pages 44–49

5. Name the object formed by each net.



6. Draw the net for each object.

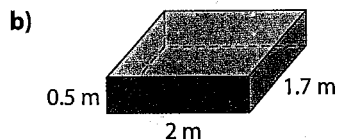
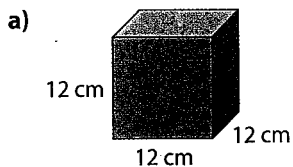


7. Using two pieces of grid paper, create a student ID card or library card protector. Draw a net, cut it out, fold it, and build your card protector. Make sure an ID card fits in it!

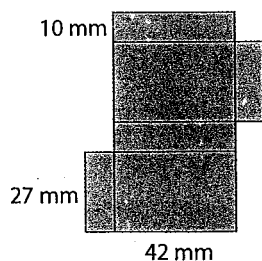
### 2.3 Surface Area of a Prism, pages 50–57

For #8 to #11, calculate the surface area to the nearest tenth of a square unit.

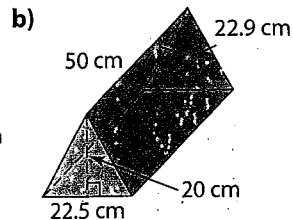
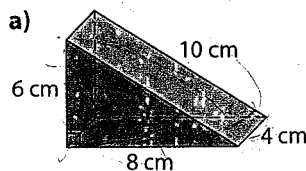
8. What is the surface area of each object?



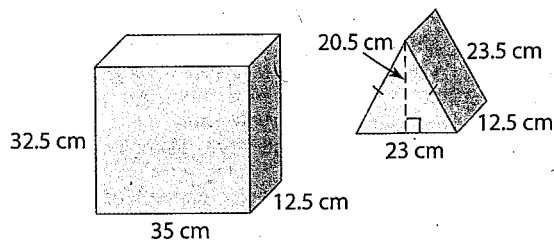
9. Using the measurements shown on the net of the rectangular prism, calculate the surface area.



10. Find the surface area of each triangular prism.



11. Liza has two more gifts left to wrap when she runs out of paper. Approximately how much more wrapping paper does she need to finish wrapping her gifts? How much should she allow for overlap? Justify your answers.

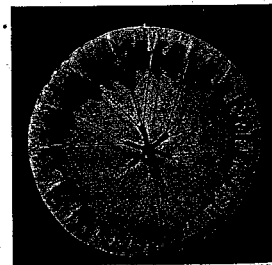


### 2.4 Surface Area of a Cylinder, pages 58–63

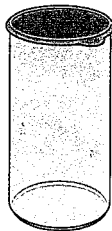
For #12 to #14, calculate the surface area to the nearest tenth of a square unit.

12. Jim is making a traditional Coast Salish drum. He has already built the circular wood frame. It has a diameter of 14 inches and a height of 3 inches.

- What would be the diameter of the circular piece of hide needed to cover the top and sides?
- What is the area of this piece of hide?
- What is the surface area of the top and side of the drum?
- Why is this not the same size as the area of the piece of hide?

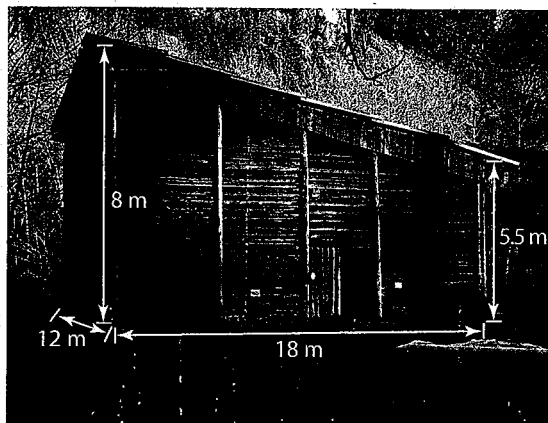


13. The circumference of a container's lid is 157 cm. The container is 102 cm tall. What is the surface area of the container?

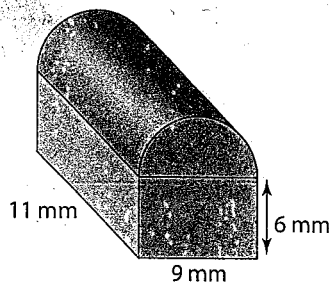


### Connect the Concepts

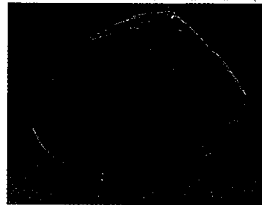
14. The Cheakamus Centre staff are planning to do some maintenance on the Squamish Bighouse. It needs a new coat of stain on the outside, and the roof needs to be pressure washed to remove moss. One 4-litre can of stain costs \$25.00 and covers  $6 \text{ m}^2$ . The West Coast Cleaning Company charges \$0.95 per square metre to pressure wash the roof. How much will it cost to clean the Bighouse?



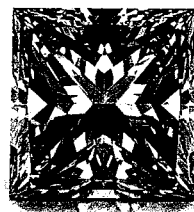
15. What is the outside surface area of the shape, including the bottom? Note that the top is the curved part.



16. a) Each edge of the diamond crystal is 1 cm. What is the outside surface area?



- b) When a diamond is cut and polished, as shown, what do you predict happens to its surface area compared to its uncut form? Use mathematical terms to explain your reasoning.



17. Suppose each layer of a cake is approximately 3 cm thick and has a diameter of 20 cm. The icing between the layers is 0.5 cm thick.
- What is the area of the icing that covers the outside of the cake shown below?
  - If an extra layer of cake was added, how much would the outside area of cake to be iced increase?
  - In general, how does changing the number of layers change the area that needs icing?
  - Describe a method to estimate the outside area that needs icing if you know the number of layers of cake.

