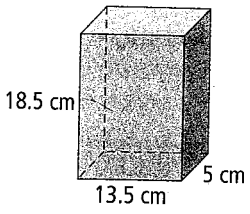
Check Your Understanding

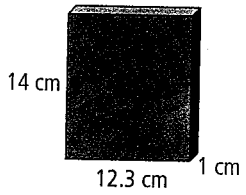
Practise

For help with #3 and #4, refer to Example 1 on page 177.

3. Find the surface area of this right rectangular prism to the nearest tenth of a square centimetre.

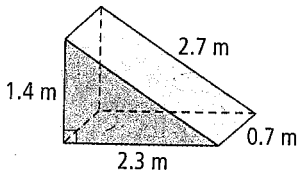


4. Find the surface area of this CD case.



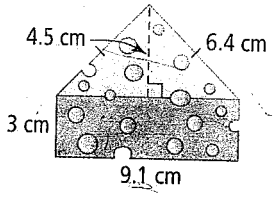
For help with #5 to #7, refer to Example 2 on pages 178–179.

5. Calculate the surface area of this ramp in the shape of a right triangular prism. Give your answer to the nearest tenth of a square metre.



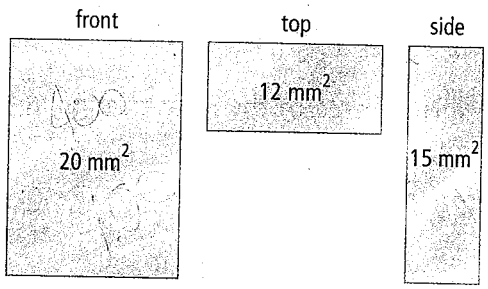
Apply

6. Cheese is sometimes packaged in a triangular box. How much cardboard would you need to cover this piece of cheese if you do not include overlapping? Calculate your answer to the nearest tenth of a square centimetre.

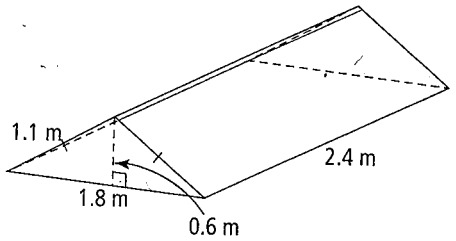


The tick marks on the two sides of the triangle indicate that these sides are equal.

7. Given the area of each face of a right rectangular prism, what is the surface area?



8. Paco builds a glass greenhouse.

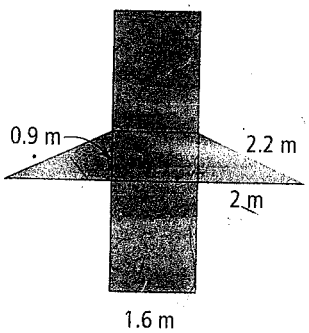


a) How many glass faces does the greenhouse have?

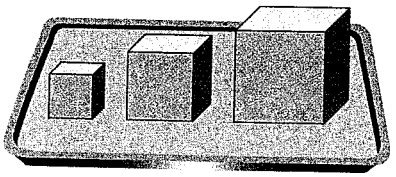
b) How much glass does Paco need to buy?

9. What is the minimum amount of material needed to make the cover of this textbook if there is no overlap? Give your answer to the nearest square millimetre.

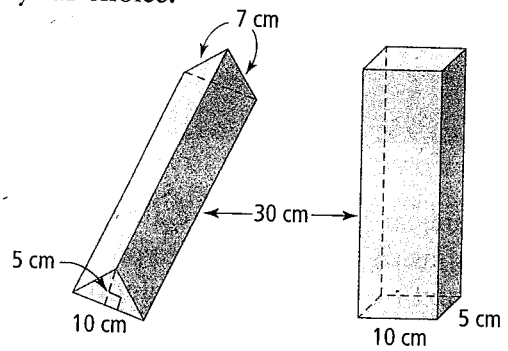
10. Jay wants to make a bike ramp. He draws the following sketch. What is the surface area of the ramp?



11. Dallas wants to paint three cubes. The cubes measure 1 m × 1 m × 1 m, 2 m × 2 m × 2 m, and 3 m × 3 m × 3 m, respectively. What total surface area will Dallas paint if he decides not to paint the bottoms of the three cubes?



12. Tadika has a gift to wrap. Both of these containers will hold her gift. Which container would allow her to use the least amount of wrapping paper? Explain your choice.



Extend

13. A square cake pan measures 30 cm on each side and is 5 cm deep. Cody wants to coat the inside of the pan with non-stick oil. If a single can of non-stick oil covers an area of 400 000 cm², how many pans can be coated with a single can?

14. Ethan is hosting games night this weekend. He bought ten packages of playing cards. Each package measures 9 cm × 6.5 cm × 1.7 cm. He wants to build a container to hold all ten packages of cards.

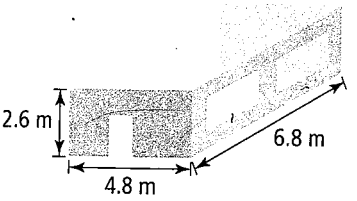
a) What are the minimum inside dimensions of the container?

b) Is there more than one kind of container that would work? Draw diagrams to help explain your answer.

15. a) If the edge length of a cube is doubled, find the ratio of the old surface area to the new surface area.

b) What happens if the edge length of a cube is tripled? Is there a pattern?

16. Shelby wants to paint the walls and ceiling of a rectangular room.



Type of Paint	Size of Paint Can	Cost
Wall paint	4 L 1 L	$24.95 $7.99
Ceiling paint	4 L	$32.95

One litre of paint covers 9.5 m².

a) What is the least amount of paint Shelby can buy to paint the room (subtract 5 m² for the door and windows)?

b) How much will the paint cost, including the amount of tax charged in your region?

MATH LINK

If the prism-shaped building you created in the Math Link on page 175, how much material do you need to cover the exterior walls and the roof of the building?