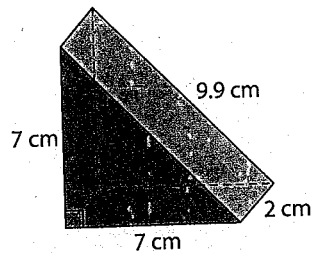


### Show You Know

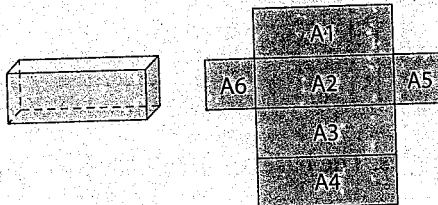
Use two methods to find the surface area of this triangular prism.  
Hint: A triangle is half the area of a rectangle.



### Connect and Reflect

#### Key Ideas

- Surface area is the sum of the areas of all the faces of a 3-D object.

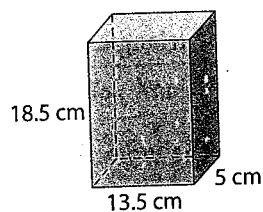


Surface Area =  $A1 + A2 + A3 + A4 + A5 + A6$ ,  
where  $A1$  represents the area of rectangle 1,  $A2$  represents the area of rectangle 2, and so on.

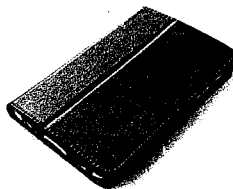
#### Practise

For help with #1 and #2, refer to Example 1 on pages 51–52.

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

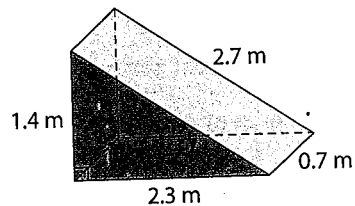


2. Find the surface area of this personal tablet case. Its dimensions are 17.0 cm  $\times$  12.5 cm  $\times$  1.3 cm.



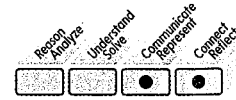
For help with #3, refer to Example 2 on page 53.

3. 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.

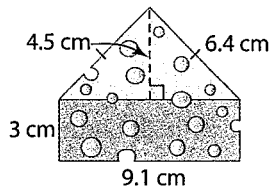


## Apply

4. Write a set of directions that you could use to determine the surface area of a prism. Share your directions with a classmate.

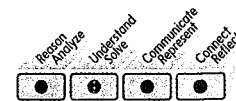


5. Cheese is sometimes packaged in a triangular box. How much cardboard would you need to make a snug box for this piece of cheese if you do not include overlapping? Calculate your answer to the nearest tenth of a square centimetre.

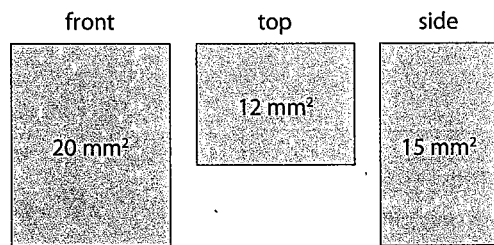


6. **Competency Check** A rectangular prism has six faces.

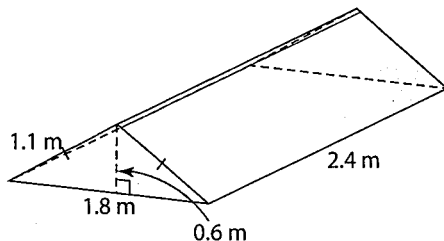
- a) Why might you have to find the area of only three of the faces to be able to find the surface area? Use pictures and words to explain your thinking.
- b) For what other types of prisms could you use a similar method?



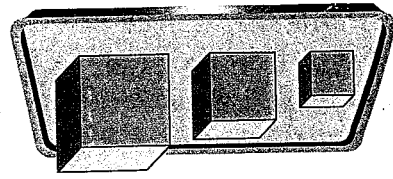
7. Given the area of each face of a right rectangular prism, what is the surface area?



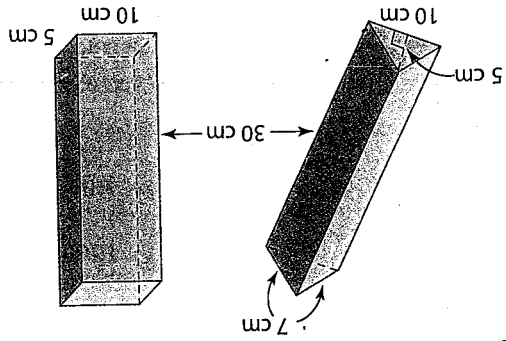
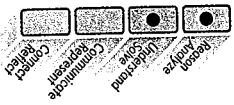
8. Paco is building a glass greenhouse.



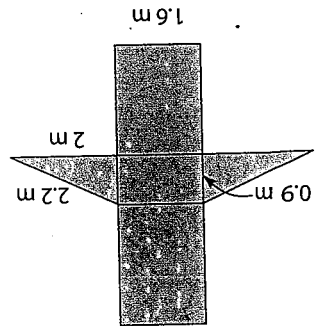
- a) How many glass faces does the greenhouse have? The floor is not glass.
- b) How much glass does Paco need to buy?
- c) If glass costs \$55 per square metre, how much will the glass cost Paco? What assumptions did you make?



12. **Competency Check** Dallas wants to paint cubes for building prisms of different sizes. The cubes measure  $2\text{ cm} \times 2\text{ cm} \times 2\text{ cm}$ ,  $3\text{ cm} \times 3\text{ cm} \times 3\text{ cm}$ , and  $4\text{ cm} \times 4\text{ cm} \times 4\text{ cm}$ , respectively.
- He paints 10 cubes of each size. What is the total surface area he must paint?
  - Describe a different strategy Dallas could use to find the surface area in order to confirm that his calculations are correct.
  - How does adding 1 cm to the edges of a cube change the surface area? How many cubes with sides of 2 cm would it take to make a cube with a surface area the same as a cube with sides of 4 cm? Model the question with blocks if possible. Explain the reasoning for your answer.



11. Tadika is wrapping a gift. Both of these containers will hold her gift. Which container would allow her to use the least amount of wrapping paper? Explain your reasoning.



9. What is the minimum amount of material needed to make the cover for this textbook with no overlap?
10. Jay wants to make a bike ramp. He draws the following sketch. What is the surface area of the ramp?