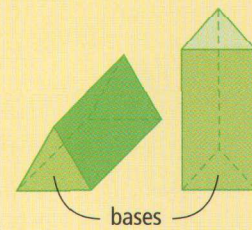


7.40 - Questions Handout #s 1 - 12

Key Ideas

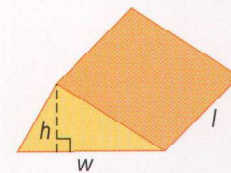
- The bases of a triangular prism are the surfaces that are triangles.
- The volume of a triangular prism can be found by multiplying the area of one triangular base by the height of the prism.
- The formula for the volume of a triangular prism is

$$\text{Volume} = \text{area of triangular base} \times \text{height of prism}$$



Communicate the Ideas

1. Consider this triangular prism.
 h is the height of the triangular base
 w is the width of the base
 l is the length (or height) of the prism



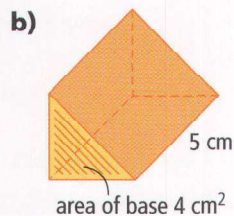
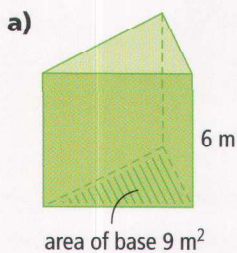
- a) What is the area of one base of the triangular prism?
- b) What is the formula for the volume of the triangular prism in terms of h , w , and l ?

Check Your Understanding

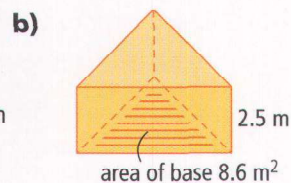
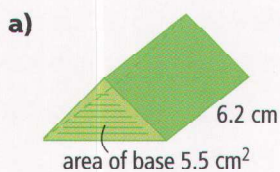
Practise

For help with questions 2 and 3, refer to Example 1.

2. Find the volume of each triangular prism.

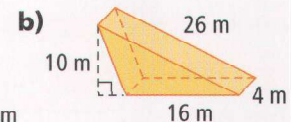
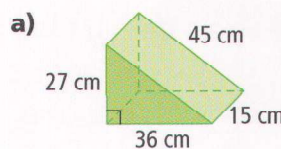


3. Find the volume of each triangular prism.

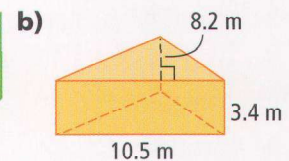
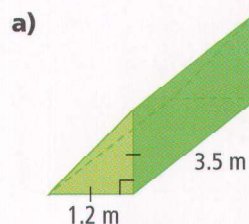


For help with questions 4 and 5, refer to Example 2.

4. Calculate the volume of each triangular prism.



5. Calculate the volume of each triangular prism. Round your answers to the nearest tenth.

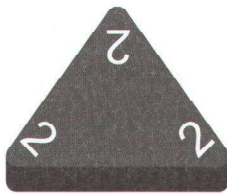


For help with questions 6 and 7, refer to Example 3.

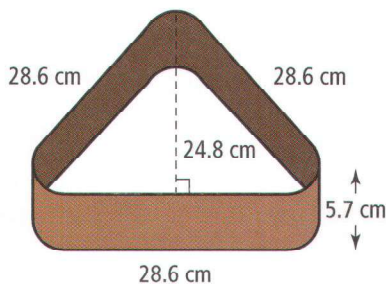
6. A triangular prism has a volume of 100 cm^3 and a height of 20 cm. What is the area of one of its bases?
7. A triangular prism can hold 2 L of water. If the area of one of its bases is 250 cm^2 , what is the height of the prism?

Apply

8. Each triangular tile in a board game has a thickness of 8 mm. What is the volume of one tile if the area of its base is 3.5 cm^2 ?

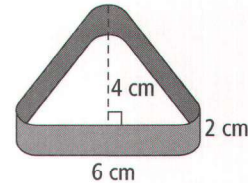


9. A standard pool table comes with a triangular rack to hold the 15 billiard balls. The rack has three equal sides, each 28.6 cm long. It is 5.7 cm deep. The shortest distance from the tip of the triangle to the opposite side is 24.8 cm.

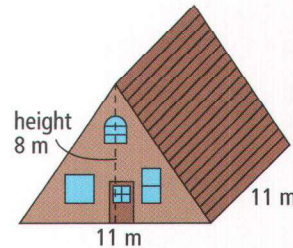


- a) What is the amount of space (volume) within the rack? Round your answer to the nearest cubic centimetre.
- b) The 15 billiard balls fit exactly into the rack. What is the approximate diameter of each ball? What do you notice about the answer? Hint: Draw a diagram to see how many balls fit on each side of the rack.

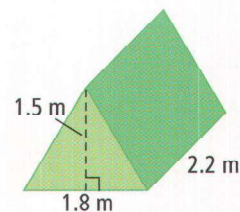
10. Mel kneaded a lump of dough into a ball with a volume of 2000 cm^3 . How many cookies can she make with this cookie cutter? What assumption(s) do you need to make?



11. The Patels own an A-frame cottage and want to install air conditioning. One air-conditioning unit says it will cool up to 500 m^3 . Will one of these units be enough to cool the cottage? Justify your answer.



12. Jimmy is preparing for a camping trip with two of his friends. He is not sure if there will be enough room for the three of them in his tent.



- a) How much space is there inside the tent?
- b) Will this be enough room for the three of them to fit comfortably? Give reasons for your answer.