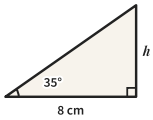
Trigonometry and volume

1

This triangle is the cross-section of a prism 20 cm long. Find the volume of the prism to 1 decimal place.



$h =$ 8 × tan 35° = 5.60

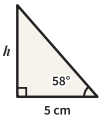
$V =$ ½ × 8 × 5.60 × 20

$V =$ ____ cm³

Answer _____

2

A cone has a radius of 5 cm. Its slant side is at 58° to the base. Find the volume of the cone to 1 decimal place.



$h =$ 5 × tan 58° = 8.00

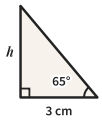
$V =$ ____

$V =$ ____ cm³

Answer _____

3

A square based pyramid has a base of side 6 cm. The line from the middle of a base edge to the top is at 65° to the base. Find the volume to 1 decimal place.



$h =$ ____ = ____

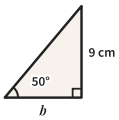
$V =$ ____

$V =$ ____ cm³

Answer _____

4

This triangle is the cross-section of a prism 15 cm long. Find the volume of the prism to 1 decimal place.

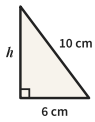


$V =$ ____ cm³

Answer _____

5

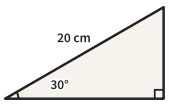
A cone has a radius of 6 cm and a slant height of 10 cm. Find its volume. Give your answer to 1 decimal place.



Answer _____

6

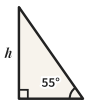
A cylinder is cut in half from top to bottom. The cut face is a rectangle whose diagonal is 20 cm, at 30° to the base. Find the volume to 1 decimal place.



Answer _____

7

A square based pyramid has a base of side 8 cm. Each sloping edge is at 55° to the base. Find the volume to 1 decimal place.



Answer _____

8

A prism is 10 cm long and has a volume of 300 cm³. Its cross-section is a right angled triangle with a base of 6 cm. Find the angle θ to 1 decimal place.



Answer _____

Trigonometry and volume *further practice*

9

A cone is 12 cm tall. The angle between its slant side and its central axis is 25°. Find its volume to 1 decimal place.

Answer _____

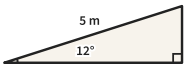
10

A tent is a prism 3 m long. Its front is an isosceles triangle with sloping sides of 2 m, each at 60° to the ground. Find the volume of the tent to 1 decimal place.

Answer _____

11

A wooden ramp is a prism 2 m wide. Its sloping top is 5 m long and makes an angle of 12° with the floor. Find the volume of the ramp to 1 decimal place.



Answer _____

12

A square based pyramid has a base of side 10 cm and a volume of 200 cm³. Find the angle between the base and the line from the middle of a base edge to the top.

Answer _____

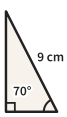
13

A cylinder is cut through its centre from top to bottom. The cut face is a rectangle whose diagonal is 15 cm long and makes 40° with the base. Find the volume of the cylinder to 1 decimal place.

Answer _____

14

A cone has a slant height of 9 cm. The slant side makes an angle of 70° with the base. Find the volume of the cone to 1 decimal place.



Answer _____

15

A prism is 12 cm long. Its cross-section is a triangle with sides of 7 cm and 9 cm and an angle of 48° between them. Find the volume to 1 decimal place.

Answer _____

16

A cone has a radius of 4 cm and a slant height of 5 cm. Sam works out its volume as $\frac{1}{3} \times \pi \times 4^2 \times 5$. Explain his mistake and find the volume.

Answer _____