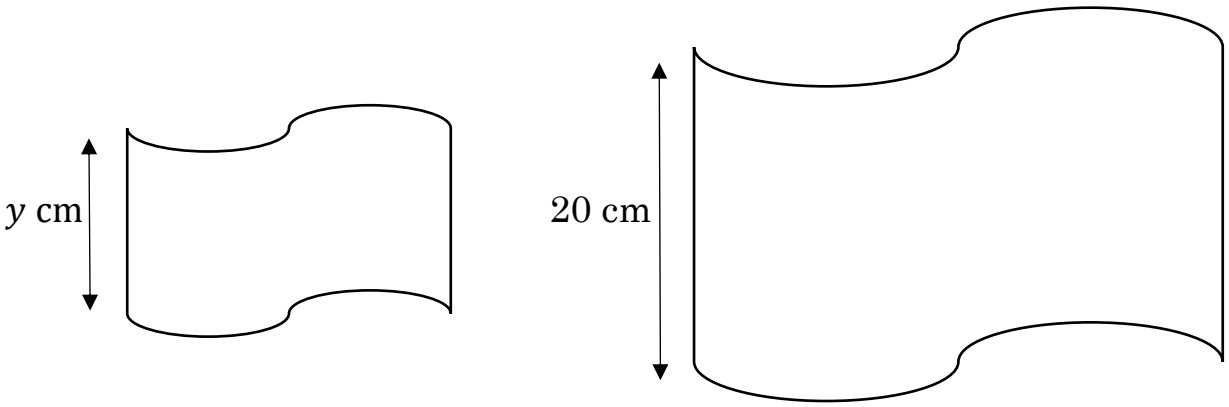
Similar Shapes Area & Volume Exam Practice

Q1. The following two shapes are similar. The areas of the shapes are 45 cm^2 and 281.25 cm^2. Find the length marked y.



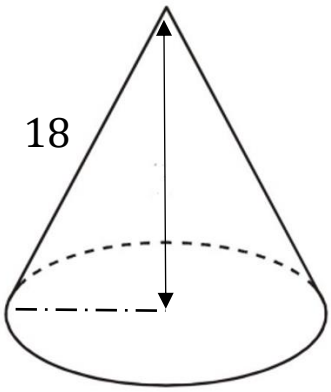
Answer: _____

(3 marks)

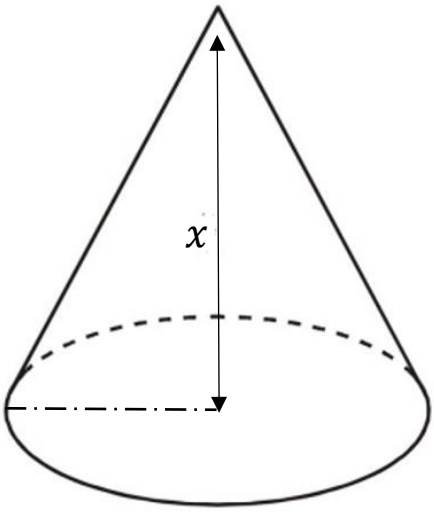
Q2. Two shapes, A and B shown below, are similar, and the radius and the perpendicular height are in the ratio 3 : 5.

The volume of the shapes are 240 cm^3 and 414.72 cm^3.

A



B



a) Find the length marked x

Answer: _____

(4 marks)

b) Find the surface area of shape B to 1 decimal place.

Answer: _____

(2 marks)

Q3. Three 3-d shapes are similar and can be described as follows:

The lengths of P to the lengths of Q are 3 : 2

The lengths of Q to the lengths of R are 6 : 11.

a) Find the ratio of the volume of shape P to shape R

Answer: _____

(2 marks)

b) The volume of shape R is 450 cm^3. Find the volume of shape Q to 1 d.p.

Answer: _____

(2 marks)

Q4. Let $S_1, S_2, S_3, \ldots$ be similar 3d shapes. The volume of S_1 is 500 cm^3.

Let $A_1, A_2, A_3 \ldots$ be the surface of these shapes.

Suppose that the surface area of $\frac{A_{k+1}}{A_k} = c$ where c is a constant for all k.

Given that the surface area of A_1 is 80 cm^2 and the surface area of A_7 is 911.25, find the volume of shape S_{12} to 1 decimal place.

Answer: _____

(5 marks)