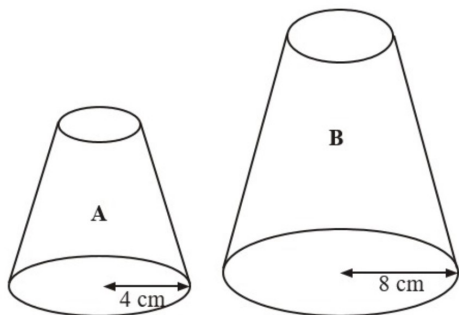


1.



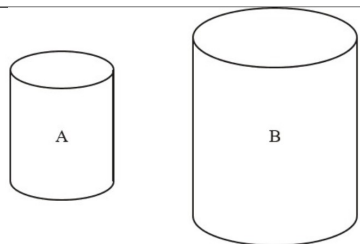
Two solid shapes, A and B, are mathematically similar.
 The base of shape A is a circle with radius 4 cm.
 The base of shape B is a circle with radius 8 cm.
 The surface area of shape A is 80 cm^2

(a) Work out the surface area of shape B. (2 marks)

The volume of shape B is 600 cm^3 .

(b) Work out the volume of shape A. (2 marks)

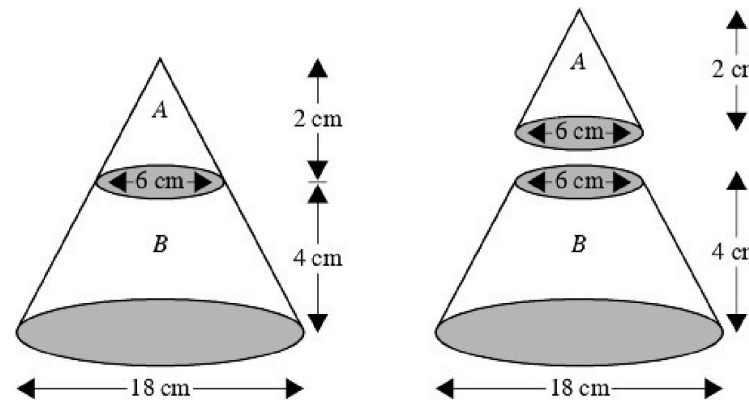
2.



The two cylinders, A and B, are mathematically similar.
 The height of cylinder B is twice the height of cylinder A.
 The total surface area of cylinder A is 180 cm^2 .

Calculate the total surface area of cylinder B. (3 marks)

3.

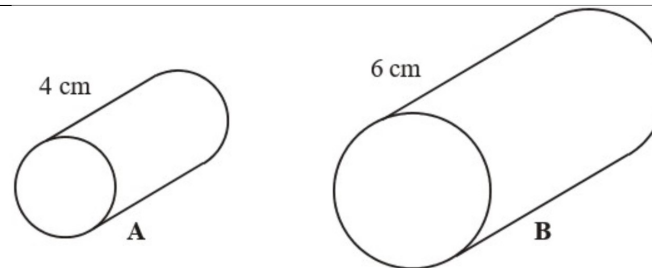


The diagram represents a large cone of height 6 cm and base diameter 18 cm.

The large cone is made by placing a small cone A of height 2 cm and base diameter 6 cm on top of a frustum B.

Calculate the volume of the frustum B.
 Give your answer in terms of π . (4 marks)

4.



Cylinder A and cylinder B are mathematically similar.

The length of cylinder A is 4 cm and the length of cylinder B is 6 cm.

The volume of cylinder A is 80 cm^3 .

Calculate the volume of cylinder B. (3 marks)

5. X and Y are two geometrically similar solid shapes.

The total surface area of shape X is 450 cm^2 .

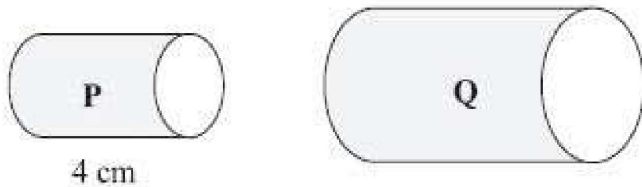
The total surface area of shape Y is 800 cm^2 .

The volume of shape X is 1350 cm^3 .

Calculate the volume of shape Y.

(3 marks)

6.



Two cylinders, P and Q, are mathematically similar.

The total surface area of cylinder P is $90\pi \text{ cm}^2$.

The total surface area of cylinder Q is $810\pi \text{ cm}^2$.

The length of cylinder P is 4 cm.

(a) Work out the length of cylinder Q.

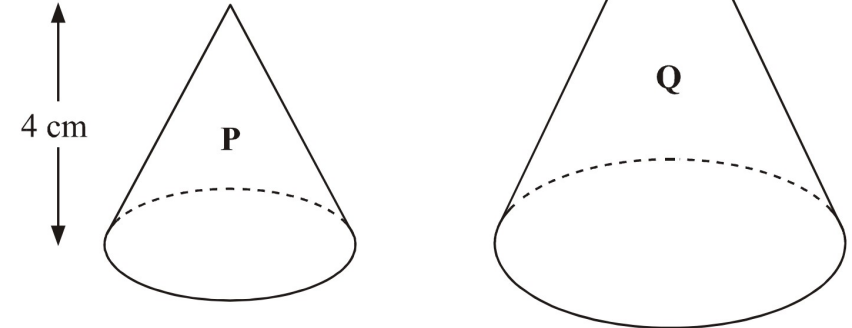
(3 marks)

The volume of cylinder P is $100\pi \text{ cm}^3$.

(b) Work out the volume of cylinder Q.
Give your answer as a multiple of π .

(2 marks)

7.



Two cones, P and Q, are mathematically similar.

The total surface area of cone P is 24 cm^2 .

The total surface area of cone Q is 96 cm^2 .

The height of cone P is 4 cm.

(a) Work out the height of cone Q.

(3 marks)

The volume of cone P is $12\pi \text{ cm}^3$.

(b) Work out the volume of cone Q.

(2 marks)