



7.4 – Volume and surface area

Student name: _____ Score: _____

1. A cuboid has a square base of side x cm and a height of y cm.

Find, in terms of x and y ,

- (a) the volume of the cuboid,

Answer(a) cm^3 [1]

- (b) the total surface area of the cuboid.

Answer(b) cm^2 [2]

2. The volume of a sphere of radius 3 cm is $k\pi \text{ cm}^3$.

Find the value of k .

Answer $k =$ [2]

3. A cuboid has a square base of side 10 cm and a volume of 1200 cm^3 .

Work out the height of the cuboid.

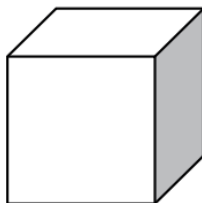
..... cm [2]

4. Find the volume of a cone with radius 3 cm and perpendicular height 8 cm.

Give your answer in terms of π .

..... cm^3 [2]

5.



The volume of a cube is 27 cm^3 .

Find the total surface area.

..... cm^2 [2]

6. The volume of a sphere is $\frac{32}{3}\pi \text{ cm}^3$.

Find the radius of the sphere.

..... cm [2]

7. The surface area of a sphere with radius r is equal to the curved surface area of a cone with radius r and height h .

Show that $h = r\sqrt{k}$, where k is a constant.

[4]

8. The volume of a sphere is 36π cubic centimetres.

Find the radius of the sphere.

..... cm [2]

9. A cone has base radius 5 cm and height $\frac{5}{4}$ cm.

A hemisphere has radius r cm.

The volume of the hemisphere is equal to the volume of the cone.

Find the value of r .

$r =$ [3]

