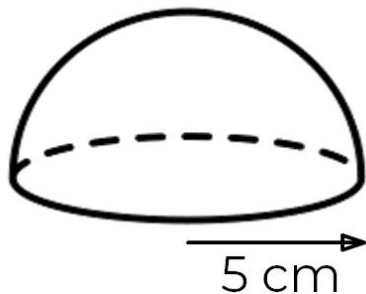# Surface area and volume of a hemisphere
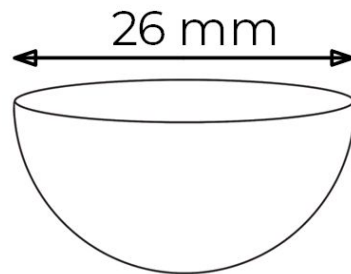
Surface area and volume of a hemisphere

1. The diagram shows a hemisphere with a radius of 5 cm.

5 cm

Work out the volume of the hemisphere.

Give your answer in terms of π.

2. The diagram shows a solid hemisphere with a diameter of 26 mm

26 mm

a) Work out the area of the circular face in terms of π.

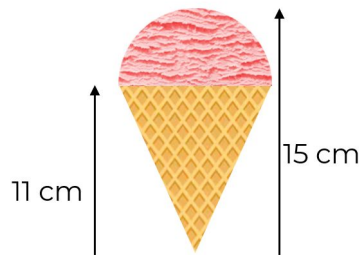b) Work out the total surface area of the hemisphere. Give your answer rounded to 1 decimal place.

Surface area and volume of a hemisphere

3. Jamie has a bowl in the shape of a hemisphere with a diameter of 12 cm.

FreeSVG

a) Work out the surface area of the outside of the bowl.

b) Jamie is going to pour 480 cm^3 of soup into the bowl.

Work out if the bowl is large enough to pour all of the soup.

4. The ice cream on top of a cone is in the shape of a hemisphere.

11 cm

15 cm

The cone has a height of 11 cm and the total height is 15 cm.

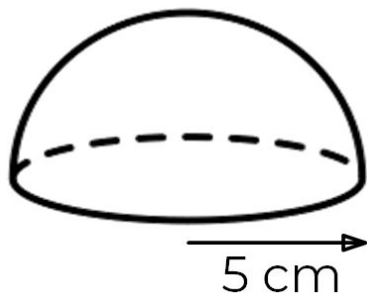Work out the volume of ice cream rounded to 1 decimal place.

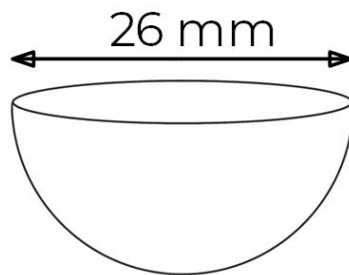# Answers

Surface area and volume of a hemisphere

1. The diagram shows a hemisphere with a radius of 5 cm.

Work out the volume of the hemisphere. Give your answer in terms of π.

$$\frac{250\pi}{3} \text{ cm}^3$$

2. The diagram shows a solid hemisphere with a diameter of 26 mm

26 mm

a) Work out the area of the circular face in terms of π. 169π mm²
b) Work out the total surface area of the hemisphere. Give your answer rounded to 1 decimal place. 1592.8 mm²

Surface area and volume of a hemisphere

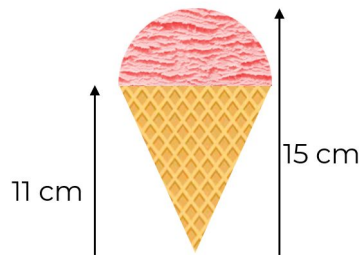3. Jamie has a bowl in the shape of a hemisphere with
a diameter of 12 cm.

FreeSVG

a) Work out the surface area of the outside of the bowl. 72π cm^2

b) Jamie is going to pour 480 cm^3 of soup into the bowl.

Work out if the bowl is large enough to pour all of the soup.

No, the bowl is too small. (452 cm^3)

4. The ice cream on top of a cone is in the shape of a hemisphere.

15 cm

11 cm

The cone has a height of 11 cm and the total height is 15 cm.

Work out the volume of ice cream rounded to 1 decimal place. 134.0 cm^3