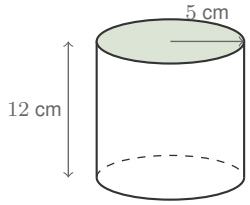
Use the π key unless a question says otherwise. Give answers to one decimal place where they are not exact. **Watch the units: volume is cubic, surface area is square.**

1 A closed cylinder has radius 5 cm and height 12 cm.



(a) Find its volume (2)

(b) Find its curved surface area (2)

(c) Find its total surface area (2)

(6 marks)

2 Tin A has radius 4 cm and height 10 cm. Tin B has radius 5 cm and height 6.4 cm. Both are closed.

(a) Find the volume of each tin (3)

(b) Find the total surface area of each tin (3)

(c) **The two tins hold the same amount. Which uses less metal, and by how much?** (2)

(8 marks)

3 A factory makes labels that wrap once round a tin of radius 6 cm and height 18 cm.

(a) Find the area of one label (2)

(b) Find the total area of label needed for 5000 tins (2)

(c) Printing costs $\$0.02$ for every 100 cm^2. **Find the total cost, to the nearest dollar.** (3)

(7 marks)

4 A cylinder has curved surface area 400 cm^2 and radius 5 cm. Find its height.

(a) Write the formula with the numbers in (1)

(b) Solve (2)

(3 marks)

5 A cylinder has curved surface area 1000 cm^2 and height 20 cm. Find its radius.

(3)

(3 marks)

6 A closed cylinder has total surface area 300 cm^2 and radius 4 cm. Find its height.

(a) Find the area of the two circles (1)

(b) Find the curved surface area (1)

(c) Find the height (3)

(5 marks)