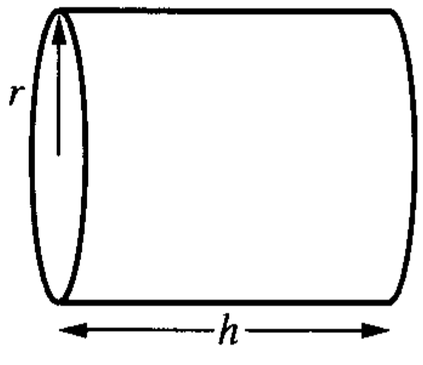
Cylinders

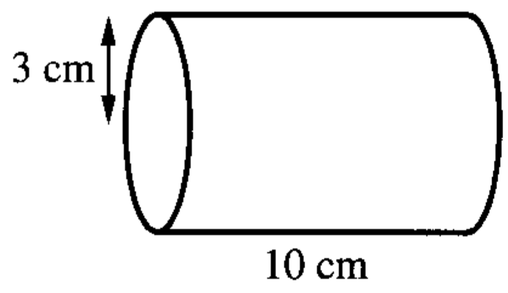
A cylinder is a prism because it has the same cross section throughout its length.



Volume = (area of cross section) × (length)

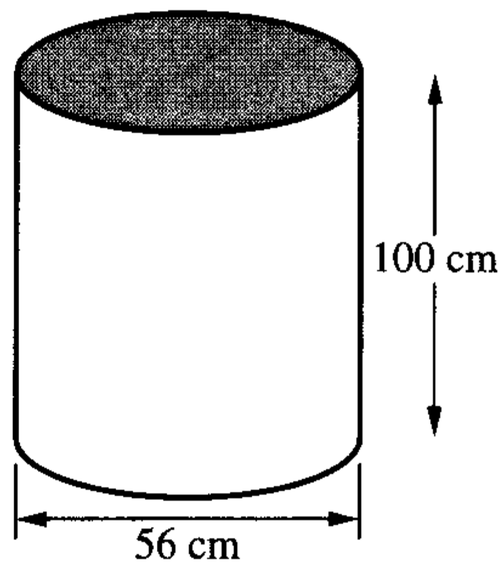
$\text{Volume} = \pi r^2 h$

(a) A cylinder has radius 3 cm and length 10 cm.
Find the volume of the cylinder.



$V = \pi r^2 h$
$V = \pi \times 3^2 \times 10$
$V = 283\,\text{cm}^3$ (to 3 s.f.)

(b) Find the capacity, in litres, of the oil drum shown



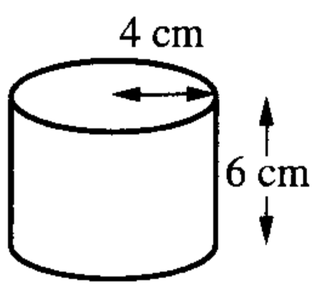
The oil drum is a cylinder.
Volume of oil drum $= \pi \times 28^2 \times 100$
$= 246\,000\,\text{cm}^3$ (to 3 s.f.)
Capacity of oil drum = 246 litres (to 3 s.f.)

Exercise 4

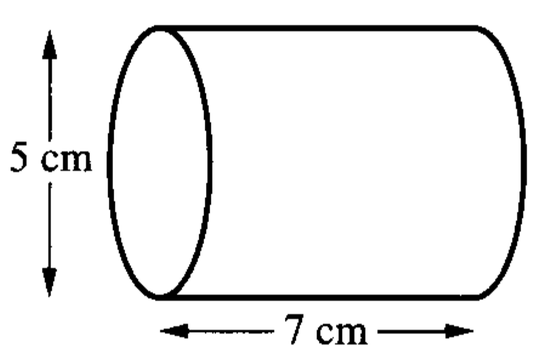
Give answers correct to 3 significant figures, where necessary.

1. Find the volume of each cylinder.

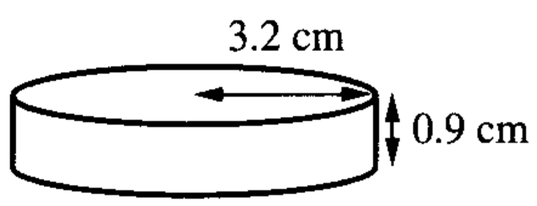
(a)



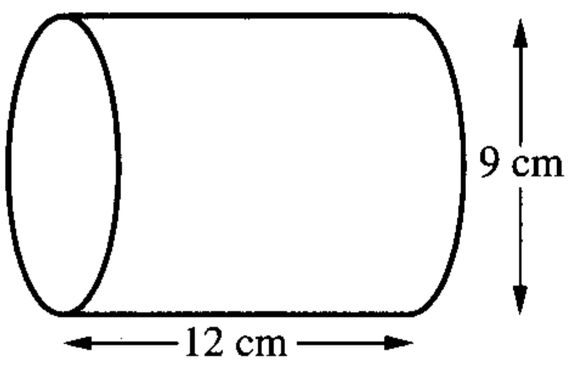
(b)



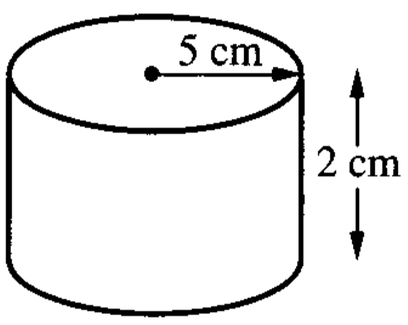
(c)



(d)



(e)



(f)