Exercise 4D Q6

Rect $9 \times 4 = 36\,cm^2$

Circle $\pi r^2 = \pi \times 2^2 = 12.6\,cm^2$

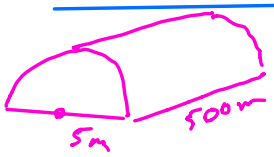
Cross-section $48.6\,cm^2$

Volume $= 48.6 \times 3$

$= 145.8$

$= 146\,cm^3$

Q7

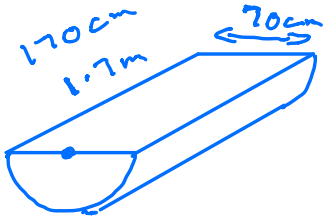


Semi-circle $= \frac{\pi r^2}{2} = \frac{\pi 5^2}{2} = 39.3\,m^2$

Vol = cross-section x length

$39.3 \times 500 = 19650\,m^3$

Q8



Semi-circle $= \frac{\pi r^2}{2}$

$= \frac{\pi \times 35^2}{2}$

$= 1924\,cm^2$

Vol = cross-section x length

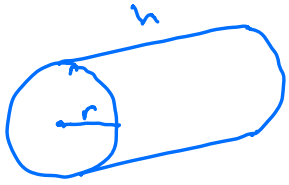
$= 1924 \times 170$

$= 327080\,cm^3$

$= 327000\,cm^3$

1 litre $= 1000cm^3$ so 327 litres

Cylinders



$Vol = \pi r^2 h$

Surface Area

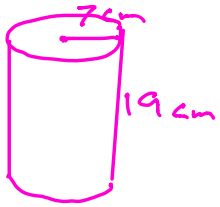
$\pi r^2 + \pi r^2 + 2\pi rh$

end + end + curved surface

$= 2\pi r^2 + 2\pi rh$

$= 2\pi r(r+h)$

Example Find volume



$r = 7\text{cm}$

$h = 19\text{cm}$

$\text{Vol} = \pi r^2 h = \pi \times 7^2 \times 19 = 2925\text{cm}^3$

$$\text{Surface Area} = 2\pi r(r+h)$$

$$= 2 \times \pi \times 7(7+19)$$

$$= 14\pi(26)$$

$$= 1144\text{cm}^2$$
