Exercise 4D   Blue Books

2a
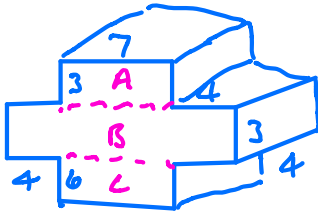
Vol of Prism
= Area of Cross Section × Length

Cross-section
A $7 \times 3 = 21$
B $15 \times 3 = 45$
C $7 \times 6 = 42$
$\overline{108 \text{ cm}^2}$

108×4

$= 432 \text{ cm}^3$

1a)
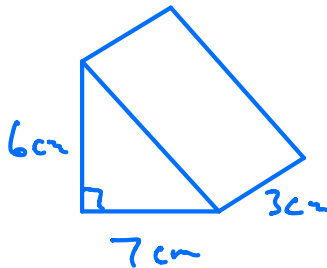
Cross-section $\frac{1}{2} \times 6 \times 7 = 21$

Length 3 cm

Volume $= 3 \times 21 = 63 \text{ cm}^2$

1b)
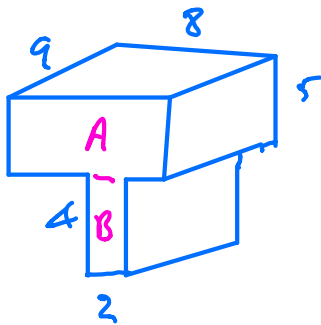
$A = 8 \times 5 = 40$
$B = 4 \times 2 = 8$ +
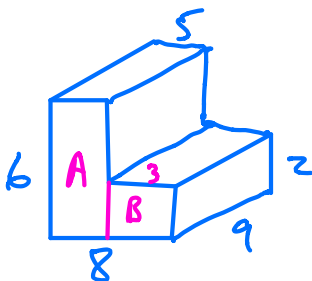Cross-section $\overline{48 \text{ cm}^2}$

Length $= 9 \text{ cm}$

$Vol = 48 \times 9 = 432 \text{ cm}^3$

1c)

$A = 6 \times 5 = 30$
$B = 3 \times 2 = 6$
Cross-section $\overline{36 \text{ cm}^2}$

Length $= 9 \text{ cm}$

$Vol = 36 \times 9 = 324 \text{ cm}^3$

Exercise 4E

1 a)
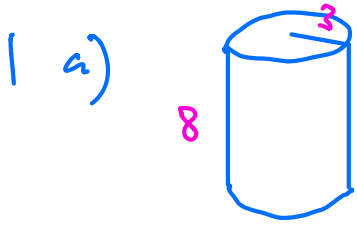
$$Vol = \pi r^2 h$$
$$= \pi \times 3^2 \times 8$$
$$= 72\pi$$
$$= 226 \text{ cm}^3$$

$$\text{Surface area} = 2\pi r h + 2\pi r^2$$
$$= 2\pi \times 3 \times 8 + 2\pi \times 3^2$$
$$= 48\pi + 18\pi$$
$$= 66\pi$$
$$= 207 \text{ cm}^2$$

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3)

cylinder diameter $= 60$ cm $\Rightarrow$ radius $= 30$ cm
$$= 0.3 \text{ m}$$

Height $= 4.2$ m

Cost £67.50 per m³

$$Vol = \pi r^2 h = \pi \times 0.3^2 \times 4.2$$
$$= 1.1875 \text{ m}^3$$

$$Cost = 1.1875 \times £67.50$$
$$= £80.16 \qquad \approx £80$$