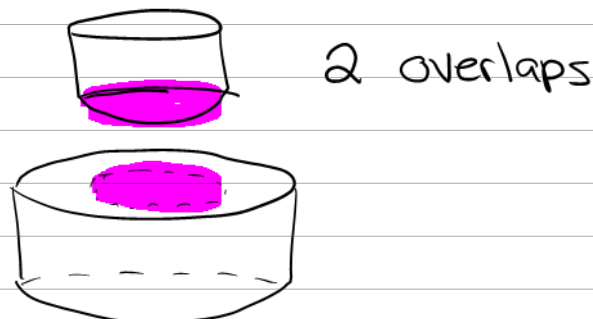
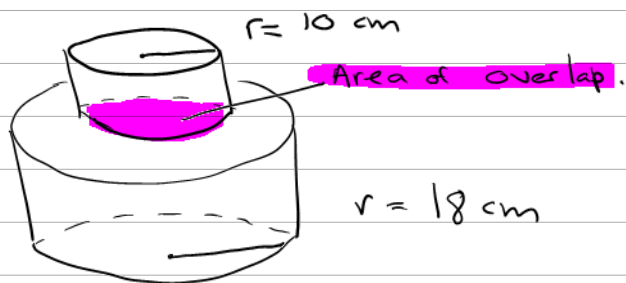


4.3 Area of Overlap

- Area covered (not shown) when components of composite objects are combined.

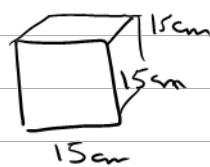
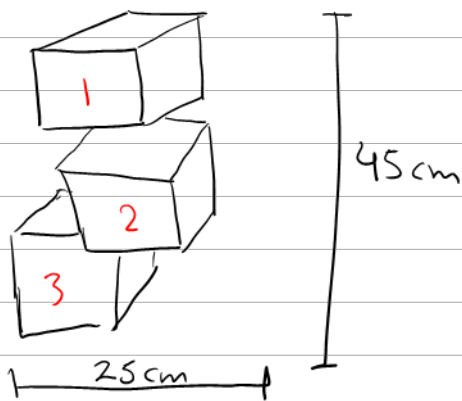
↳ Where the "glue" goes.



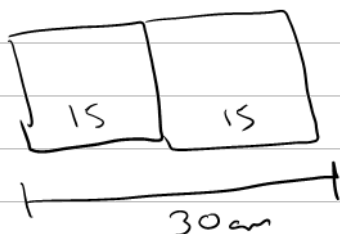
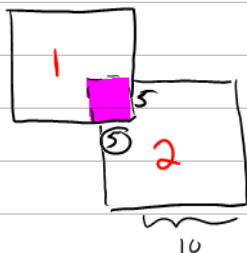
$$\begin{aligned}
 A &= \pi r^2 \\
 &= \pi 10^2 \quad \text{BODMAS} \\
 &= \pi 100 \\
 &= 314.16 \text{ cm}^2
 \end{aligned}$$

$$\begin{aligned}
 \text{Total overlap} &= 2 \cdot A_1 \\
 &= 314.16 \times 2 \\
 &= \underline{\underline{628.32 \text{ cm}^2}}
 \end{aligned}$$

3 cubes



Top view



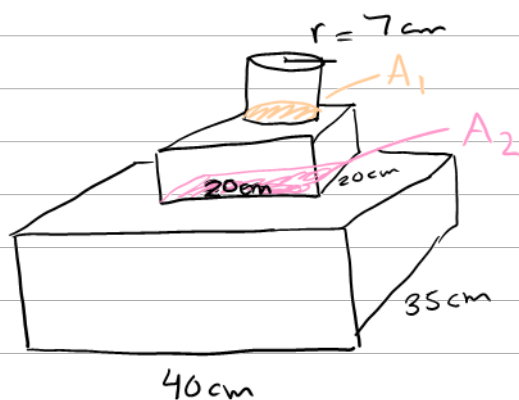
Find the total area of overlap.

4 overlaps

$$A_T = 4A_o$$

$$\begin{aligned}
 A_o &= 5^2 \\
 &= 5^2 \\
 &= 25 \text{ cm}^2
 \end{aligned}$$

$$\begin{aligned}
 A_T &= 4 \cdot 25 \\
 &= \underline{\underline{100 \text{ cm}^2}}
 \end{aligned}$$



Find total overlap.

$$A_T = 2A_1 + 2A_2$$

$$\begin{aligned} A_1 &= \pi r^2 \\ &= \pi 7^2 \\ &= \pi 49 \\ &= 153.93 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} A_2 &= lw \\ &= 20 \cdot 20 \\ &= 400 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} A_T &= 2(153.93) + 2(400) \\ &= 307.86 + 800 \\ &= \underline{1107.86 \text{ cm}^2} \end{aligned}$$

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+ worksheet

* Quiz corrections!