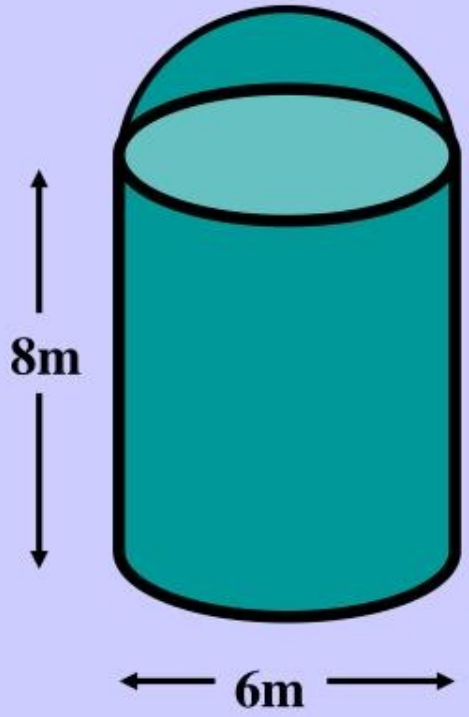
# COMPOSITE SOLIDS

**Composite solids can be formed by either**

**(i) combining two or more shapes.**

**(ii) removing one solid from another.**

**Ex** **A grain silo consists of a cylinder of diameter 6m and height 8m topped by a hemisphere.**



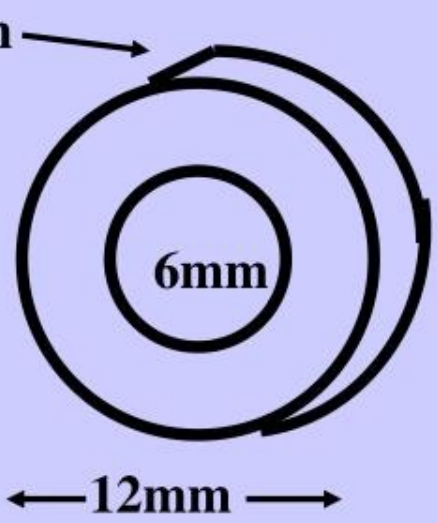

**For both cylinder & hemisphere d = 6 so r = 3.**

**Vol cylinder = $\pi r^2 h$ = 3.14 X 3 X 3 X 8**
**= 226.08**

**Vol h-sphere = $^2/_3\ \pi r^3$ = 2 X 3.14 X 3 X 3 X 3 ÷ 3**
**= 56.52**

**Total vol = 226.08 + 56.52 = 282.6 = $\underline{283 m^3}$**

**Example** A "Polo" mint is 4mm thick with a diameter of 12mm. The hole is 6mm in diameter. Find the total vol of mint.




NB: the mint is a "big cylinder – a wee cylinder".

**Big C.** d = 12 so r = 6 & h = 4

$V = \pi r^2 h = 3.14 \times 6 \times 6 \times 4 = 452.16$

**Wee C.** d = 6 so r = 3 & h = 4

$V = \pi r^2 h = 3.14 \times 3 \times 3 \times 4 = 113.04$

Vol mint = 452.16 – 113.04 = 339.12 = $\underline{339 mm^3}$