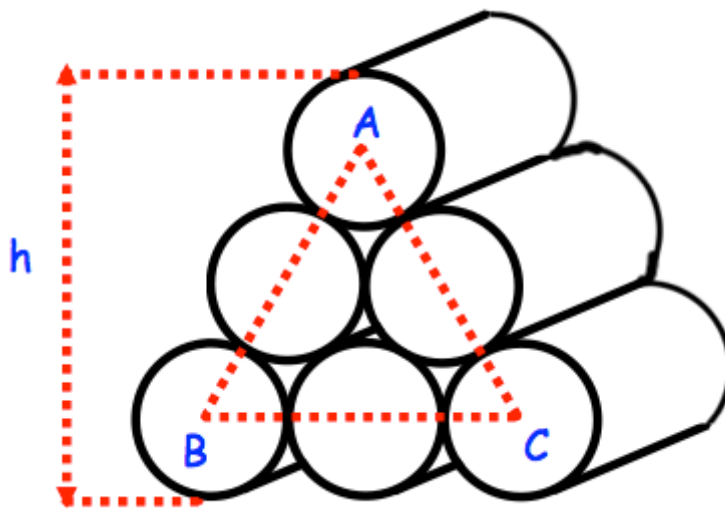


December 22nd

Six cylinders, each of radius 1.2m and length 8m, are stacked as shown. The centres of the ends of the cylinders are labelled A, B and C.

- (a) Find the length of AB
- (b) Calculate h, the height of the stack.
- (c) Calculate the volume.



Triangle BC is equilateral, side length 4.8m

a) **AB = 4.8m**

The length of the perpendicular from A to BC = $\sqrt{4.8^2 - 2.4^2} = \frac{12\sqrt{3}}{5}$

b) Height of stack = $\frac{12\sqrt{3}}{5} + 2.4 = \frac{12+12\sqrt{3}}{5}$ m

c) Volume = $6\pi \times 1.2^2 \times 8 = 69.12\pi$ m³