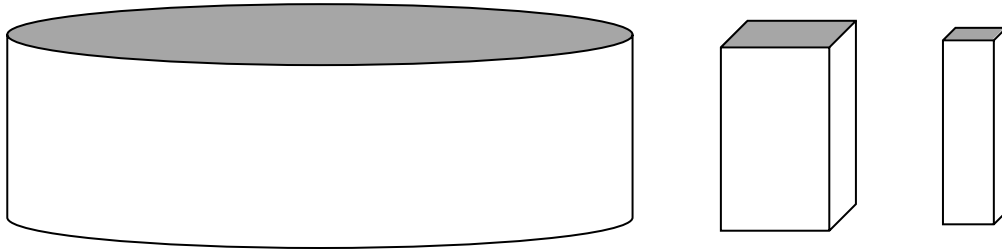


# Spicy Question #10



The cylinder and both cuboids below are hollow and open topped.



The radius of the cylinder is 2 m

The cross section of the larger cuboid is a square of side length 80 cm.

The cross section of the smaller cuboid is a square of side length 30 cm.

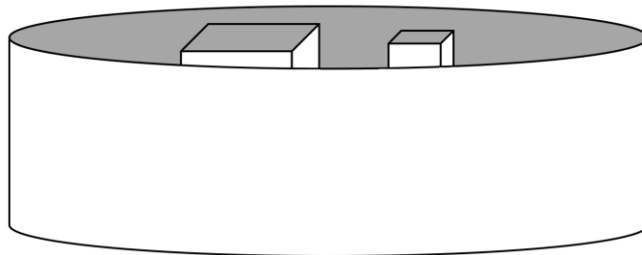
All three shapes are the same height at 1.5 m

Both cuboids are placed into the cylinder to form a container.

The container is placed below three taps as shown below.



**Calculator allowed**



Water flows from tap A directly into the cylinder at a rate of 10 litres/minute.

Water flows from tap B directly into the larger cuboid at a rate of 4 litres/minute.

Water flows from tap C directly into the smaller cuboid at a rate of 3 litres/minute.

Once each cuboid is full the water spills over into the cylinder.

All three taps are turned on together at 7am.

To the nearest minute, what time does the water level in the cylinder reach half of the height of the cylinder.

[1 litre = 1000 cm<sup>3</sup>]

**SUBMISSION DEADLINE 19/1/23 – 7PM**

Video  
Solution



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