

# AI1110-Assignment 1

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## QUESTION

The circumference of the base of a cylindrical vessel is 132 cm and its height is 25 cm. Find the

- 1) radius of the cylinder
- 2) volume of cylinder.(use  $\pi = \frac{22}{7}$ )

## SOLUTION

Let  $r$  and  $h$  be the radius of the base and height of the cylindrical vessel, respectively.

Let  $C_{base}$  be its base circumference and  $V$  be its volume.

We know that,

$$C_{base} = 2\pi r \quad (1)$$

$$V = \pi r^2 h \quad (2)$$

### 1. Radius of the cylinder

$$C_{base} = 2\pi r \quad \dots(1)$$

$$132 = 2\pi r$$

$$132 = 2 \times \frac{22}{7} \times r$$

$$r = 21$$

Thus the radius of base of the cylindrical vessel is 21 cm.

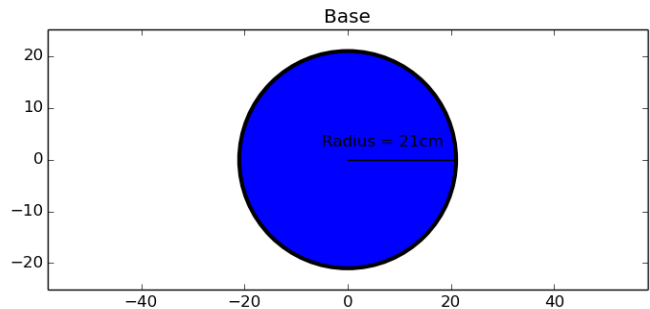
### 2. Volume of the cylinder

$$V = \pi r^2 h \quad \dots(2)$$

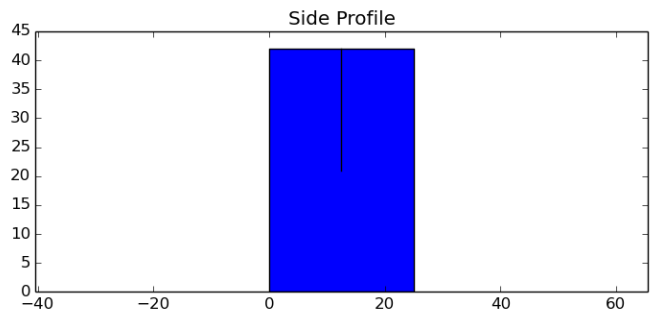
$$V = \frac{22}{7} \times 21^2 \times 25$$

$$V = 34650$$

Thus, the volume of the cylindrical vessel is  $34650 \text{ cm}^3$ .



Base of the cylindrical vessel with radius 21 cm



Side view of the cylindrical vessel with height 25 cm