Assignment 1 (ICSE Class 10 2018)

Vedant Bhandare
CS21BTECH11007

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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,

$$C_{base} = 2\pi r$$

$$V = \pi r^2 h$$

1. radius of the cylinder

$C_{base} = 2\pi r$

$132 = 2\pi r$

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

$r = 21$

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

2. volume of the cylinder

$V = \pi r^2 h$

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

$V = 34650$

Thus, the volume of the cylindrical vessel is 34650 cm^3.

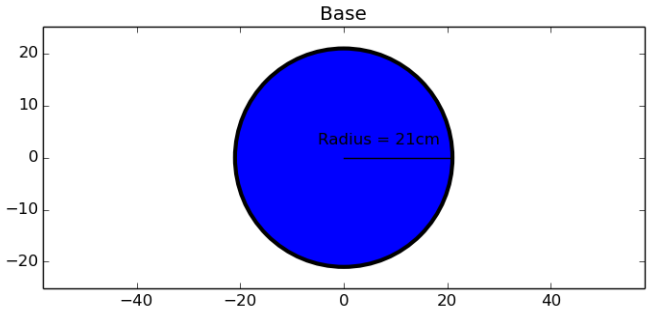

Figure 1: Base of the cylindrical vessel

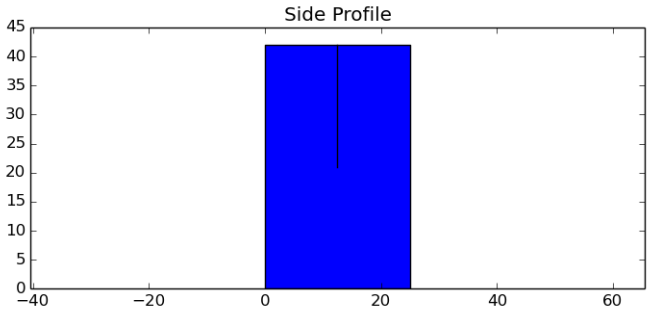

Figure 2: Side Profile of the cylindrical vessel