The Practise Ground

Class 9-10 Maths

Volume & Surface Area

Cylinder, cone, sphere and hemisphere

1

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

Cylinder volume

Curved surface = $2\pi rh$; total surface = $2\pi r(r + h)$

2

$$V = (1/3)\pi r^2 h$$

Cone volume

Slant height $l = \sqrt{(r^2 + h^2)}$; curved surface = πrl

3

$$V = (4/3)\pi r^3$$

Sphere volume

Surface area = $4\pi r^2$

4

$$V = (2/3)\pi r^3$$

Hemisphere volume

Curved surface = $2\pi r^2$; total surface = $3\pi r^2$

r	h	l	π
radius	**height**	**slant height**	**pi**
cm, m	cm, m	cm, m	22/7 or 3.14

Remember

Volume is in cubic units (cm^3); area is in square units (cm^2).

Use the same unit for r and h before you calculate.

Quick example

Sphere of radius 7 cm

$V = (4/3) \times (22/7) \times 7^3$

$V = 4312 / 3 \approx 1437.3\ cm^3$

Think you've got it? Test yourself.

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