

Volume of Prisms and Cylinders

7th Grade

Base area times height — one formula for every prism there is.

For any prism or cylinder, volume is the area of the base multiplied by the height.

$$V = B \times h$$

Rect. prism $4 \times 3 \times 5$

60

Base $4 \times 3 = 12$, times height 5.

Triangular prism, base 6 cm^2

$6h$

Base area $\times$ length.

Cylinder $r=3$, $h=10$

≈ 282.7

$\pi \times 9 \times 10$.

Halve the height

halve the volume

Volume is directly proportional to height.

THE COMMON MISTAKE

✗ using the slant side as the height

✓ use the perpendicular height

Height always means straight up from the base, at right angles to it.

A pyramid or cone is exactly one third of the prism with the same base and height.