

Volume of Triangular Pyramids

A **triangular pyramid** (also called a **tetrahedron**) is a 3D solid with a **triangular base** and **three triangular faces** that meet at a single **apex (vertex)**. The **volume** of a triangular pyramid tells us how much space it occupies inside.

The **formula** for the volume of a triangular pyramid is: $V = \frac{1}{3} \text{ Base Area} \times \text{Height}$

If the base is a triangle with base b and height h_b : $\text{Base Area} = \frac{1}{2} b h_b$

b = base of the triangular base

h_b height of the triangular base

H = perpendicular height of the pyramid

Practice Problems

1. A triangular pyramid has a base with base length **8 cm**, base height **6 cm**, and pyramid height **10 cm**. Find its volume.
2. The base of a triangular pyramid is an equilateral triangle with side length **12 cm** and height **10.4 cm**. If the pyramid's height is **15 cm**, find the volume.
3. A triangular pyramid has a base area of **24 cm²** and a pyramid height of **9 cm**. What is the volume?
4. The base of a triangular pyramid has a base of **14 m** and a height of **9 m**. If the perpendicular height of the pyramid is **11 m**, find the volume.
5. A small triangular pyramid has a base with area **45 cm²** and height **18 cm**. Find the volume.
6. The base of a triangular pyramid is a triangle with sides 5 cm, 12 cm, and 13 cm (a right triangle). If the pyramid's height is **20 cm**, find its volume.
7. A pyramid has a triangular base where the base is **10 m** and the height of the base is **8 m**. The perpendicular height from the apex to the base is **12 m**. Find the volume.
8. The base area of a pyramid is **60 m²**. If its volume is **180 m³**, find the perpendicular height of the pyramid.
9. The base of a triangular pyramid has a base length of **16 cm** and base height of **10 cm**. If the pyramid's height is **9 cm**, find its volume.

