Real-World Volumes - Math for Everyday Life

In daily life, we constantly encounter 3D objects - boxes, bottles, storage bins, cones, tanks, and more. Understanding **volume** helps us measure, plan, and make smart decisions - whether remodeling, cooking, filling containers, or comparing products. Use the appropriate **volume formula** for each solid (cube, prism, cylinder, cone, sphere, pyramid, or composite shape) and **show all work**.

1. The Storage Box - You're organizing your garage and buy a **rectangular storage bin** that measures **80 cm long**, **40 cm wide**, and **35 cm tall**.
What is its **volume in liters**? (Hint: 1,000 cm^3 = 1 L)

2. The Garden Planter - A **triangular prism-shaped planter** has a base triangle with a **base of 50 cm** and **height of 30 cm**. The prism is **100 cm long**.
Find its **volume** in cubic centimeters.

3. The Coffee Mug - Your favorite mug is a **cylinder** with a **radius of 4 cm** and a **height of 10 cm**. What is its **capacity in cubic centimeters (cm³)**? (π = 3.14)

4. The Ice Cream Scoop - A perfectly round scoop of ice cream has a **radius of 3.5 cm**. Find its **volume**. Then, find the **volume of half a scoop (a hemisphere)** for a "half-scoop" serving.

5. The Traffic Cone - A road crew's **traffic cone** is modeled as a **cone** with a **radius of 15 cm** and a **height of 45 cm**. Find the cone's **volume**.

6. The Water Tower - A small rural water tower is a **cylinder** topped with a **hemispherical dome**. The cylindrical part has a **radius of 6 m** and a **height of 10 m**. Find the **total volume** of the structure.

7. The Pyramid Lamp - A decorative **rectangular pyramid-shaped lamp** has a **base of 20 cm by 12 cm** and a **height of 18 cm**.
Find the **volume of the lamp's pyramid frame**.

8. The Toblerone Chocolate Bar - The bar is shaped like a **triangular prism** with an **equilateral triangular base** (side = 4 cm, height of triangle = 3.5 cm) and a **length of 25 cm**. Find the **volume** of the chocolate bar.