Volume of Prisms and Cylinders

Polyhedron: A three-dimensional object with faces that are polygons.

Prism:

A prism is a three-dimensional solid (a polyhedron). The top and bottom (the bases) are parallel, identical polygons. The lateral faces are rectangles; they meet the bases at right angles. A prism is named by the shape of its bases, for example, rectangular prism, triangular prism, square-based prism.

Volume of any Prism: $V = A_{base} \times \text{height}$

The formula for the volume of a cylinder is the same as a prism.

Volume of Cylinder: $V = A_{base} \times \text{height}$ $V = \pi r^2 h$

Example 1: Calculate the volume of the following triangular-based prism.
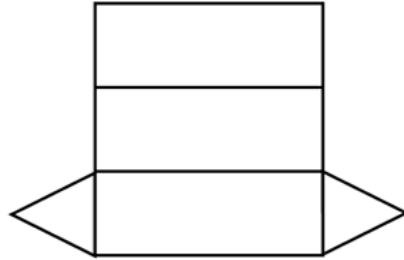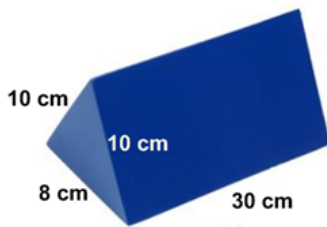
Example 2: A can of soup has a volume of 375 mL. If the height of the can is 12 cm determine the radius of the can. (Note: 1 mL = 1cm^3)

Example 3: A box of chocolates has a volume of 80 cm³. If its length is 10 cm and its height is 2 cm, what is its width?