MATC9 Ch3.2 Key Concepts 1 Volume of a Cone Worked Example

Example: Soft drinks at a fall fair are sold in conical cups. Each has a radius of 6 cm and a height of 12 cm. Find the volume of each cup.

Solution: Volume of a cone is calculated using the formula $V = \frac{1}{3}\pi r^2 h$.

$$V = \frac{1}{3} \times \pi \times 6^2 \times 12$$
$$= 452.4 \text{ cm}^3$$

The volume of the cup is 452.4 cm^3.

Practice:

1. Nels built a conical hopper to store grain. It had a radius of 2.1 m, and a height of 5.2 m. How much grain could it store?

2. Hamida twisted a piece of paper into a cone with a radius of 4.4 cm and a height of 20 cm. What was the volume of the cone?

Answers: 1. 24 m^3 2. 405.5 cm^3