Set 1
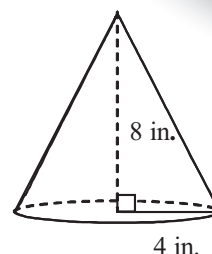
1 Find the volume of a cone with a radius of four inches and a height of eight inches.

$$V = \frac{1}{3}\pi r^2 h$$

$$= \frac{1}{3} \times 3.14 \times (4\,\text{in.})^2 \times 8\,\text{in.}$$

$$\approx 133.97\ \text{in.}^3$$

8 in.

4 in.

2 Find the volume of a cone with a diameter of 40 millimeters and a height of 10 millimeters.

$$V = \frac{1}{3}\pi r^2 h$$

$$= \frac{1}{3} \times 3.14 \times (20\ \text{mm})^2 \times 10\,\text{mm}$$
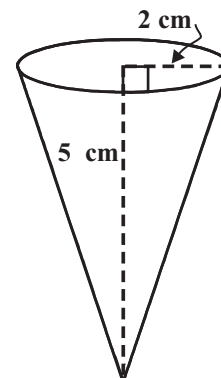
$$\approx 4{,}186.67\ \text{mm}^3$$

10 mm

40 mm
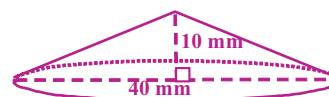
3 Six conical paper cups are completely filled with water. All six cups are poured into an empty pitcher. What is the volume of water in the pitcher?

$$V = \frac{1}{3}\pi r^2 h$$

$$= \frac{1}{3} \times 3.14 \times (2\ \text{cm})^2 \times 5\ \text{cm}$$

$$\approx 20.93\ \text{cm}^3$$

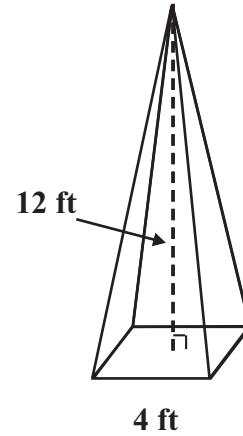$$20.93\ \text{cm}^3 \times 6 = 125.58\ \text{cm}^3$$

2 cm

5 cm

There are about 125.58 cm³ of water in the pitcher.

1 Find the volume of a square pyramid with base edges of four feet and a height of 12 feet.

$$V = \frac{1}{3}Bh$$
$$= \frac{1}{3} \times (4 \text{ ft})^2 \times 12 \text{ ft}$$
$$= \frac{1}{3} \times 16 \text{ ft}^2 \times 12 \text{ ft}$$
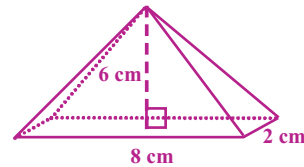$$= 64 \text{ ft}^3$$

12 ft

4 ft

2 Find the volume of a rectangular pyramid with base dimensions of eight centimeters by two centimeters and a height of six centimeters.

$$B = 8 \text{ cm} \times 2 \text{ cm} = 16 \text{ cm}^2$$

$$V = \frac{1}{3}Bh$$
$$= \frac{1}{3} \times 16 \text{ cm}^2 \times 6 \text{ cm}$$
$$= 32 \text{ cm}^3$$

6 cm

2 cm

8 cm

3 Find the volume of the triangular pyramid.

$$B = \frac{1}{2}bh = \frac{1}{2} \times 5 \text{ cm} \times 16 \text{ cm} = 40 \text{ cm}^2$$

$$V = \frac{1}{3}Bh$$
$$= \frac{1}{3} \times 40 \text{ cm}^2 \times 12 \text{ cm}$$
$$= 160 \text{ cm}^3$$

12 cm

5 cm

16 cm