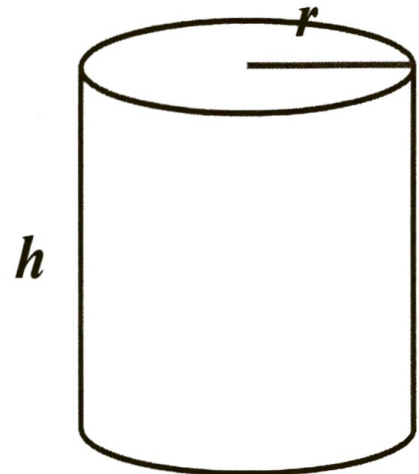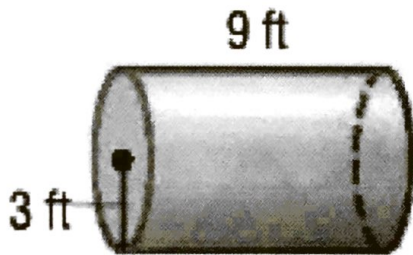## Volume of a Cylinder:

Base • Height
↑

$V = \pi r^2 h$

Find the volume of the cylinders. Express your answer in terms of pi and an approximation rounded to the nearest tenth. Label your units appropriately.
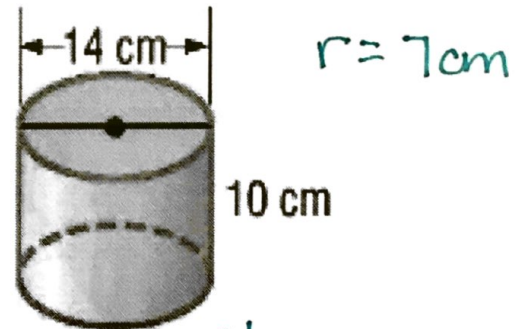
Ex. 5

9 ft

3 ft

$V = \pi r^2 h$
$V = \pi (3)^2 (9)$
$9 \cdot 9$
81

Volume in terms of Pi $V = 81\pi \text{ ft}^3$

Approximate Volume 254.5 ft^3

Ex. 6

←14 cm→

$r = 7 cm$

10 cm

$V = \pi r^2 h$
$V = \pi (7)^2 (10)$
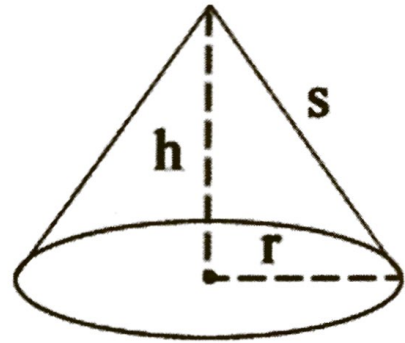$49 \cdot 10$
490

Volume in terms of Pi $490\pi \text{ cm}^3$

Approximate Volume 1539.4 cm^3
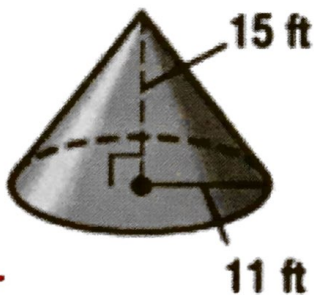
Volume is always units^3

Volume of a Cone:

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

Find the volume of the cones. Express your answer in terms of pi and an approximation rounded to the nearest tenth. Label your units appropriately.
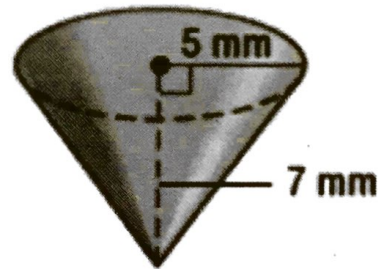
Ex. 7

15 ft

11 ft

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

$$\frac{\pi (11)^2 (15)}{3}$$

Volume in terms of Pi ___605π ft³___

Approximate Volume ___1900.7 ft³___
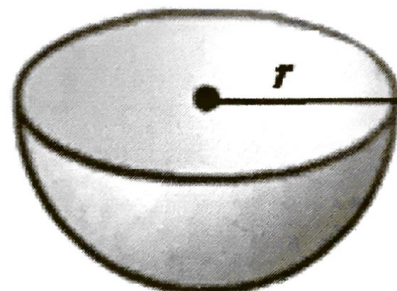
Ex. 8

5 mm

7 mm

$$V = \frac{\pi r^2 h}{3} = \frac{\pi (5)^2 (7)}{3}$$

Volume in terms of Pi ___58.3π mm³___

Approximate Volume ___183.3 mm³___
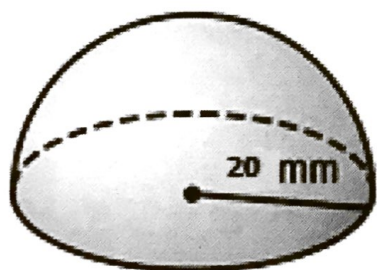
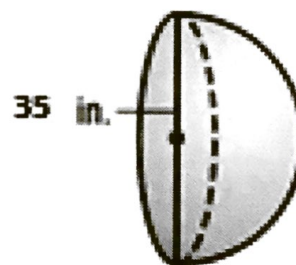## Volume of a Hemisphere:

$$V = \frac{\frac{4}{3}\pi r^3}{2}$$

Find the volume of the hemisphere. Express your answer as an approximation rounded to the nearest tenth. Label your units appropriately.

Ex. 11

20 mm

$$V = \frac{\frac{4}{3}\pi r^3}{2} = \frac{\frac{4}{3}\pi (20)^3}{2}$$

Approximate Volume __16,755.2 mm³__

Ex. 12

35 in.

$$r = 17.5$$

$$\frac{\frac{4}{3}\pi (17.5)^3}{2}$$

Approximate Volume __11,224.6 in³__