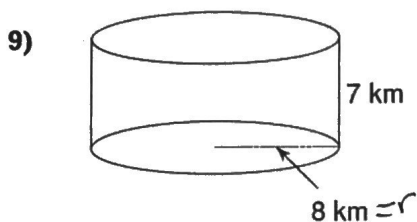


Cylinders

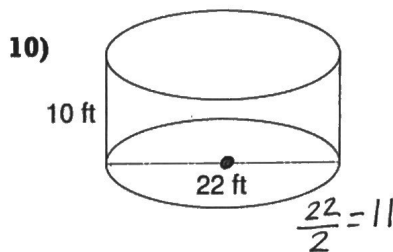
$$V = \pi r^2 h$$



$$V = \pi (8)^2 (7)$$

$$V = 448\pi \text{ km}^3$$

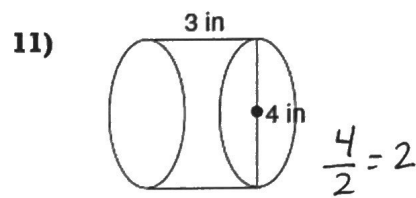
$$V \approx 1407.43 \text{ km}^3$$



$$V = \pi (11)^2 (10)$$

$$V = 1210\pi \text{ ft}^3$$

$$V \approx 3801.33 \text{ ft}^3$$



$$V = \pi (2)^2 (3)$$

$$V = 12\pi \text{ in}^3$$

$$V \approx 37.70 \text{ in}^3$$

12) A cylinder has a volume of $360\pi \text{ in}^3$. If the cylinder has a height of 10 in., what is its radius?

$$V = \pi r^2 h$$

$$\frac{360\pi}{\pi} = \frac{\pi (r^2)(10)}{\pi}$$

$$\frac{360}{10} = \frac{r^2(10)}{10}$$

$$36 = r^2$$

$$6 = r$$

$$r = 6 \text{ in}$$

13) A cylinder has a volume of 4580.442 m^3 . If the cylinder has a diameter of 18 m, find its height.

$$\frac{4580.442}{\pi} = \frac{\pi (9)^2 h}{\pi}$$

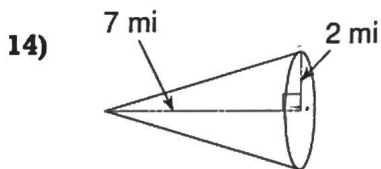
$$\frac{4580.442}{81} = \frac{81h}{81}$$

$$h = 18 \text{ m}$$

$$h = 18$$

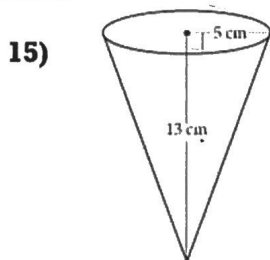
Cones

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



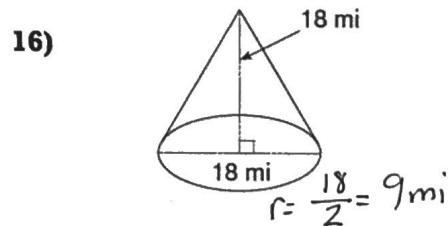
$$V = \frac{\pi (2)^2 (7)}{3} = 28\pi$$

$$V \approx 29.32 \text{ mi}^3$$



$$V = \frac{\pi (5)^2 (13)}{3} = 325\pi$$

$$V \approx 340.34 \text{ cm}^3$$



$$V = \frac{\pi (9)^2 (18)}{3} = 1458\pi$$

$$V \approx 1526.81 \text{ mi}^3$$

17) A cone has a volume of $121\pi \text{ ft}^3$. If the radius of the cone is 5.5 ft, find its height.

$$3 \cdot 121\pi = \pi (5.5)^2 h$$

$$363\pi = 30.25\pi h$$

$$h = 12 \text{ ft}$$

18) A cone with a height of 15 cm has a volume of 141.37 cm^3 . Find the diameter of the cone.

$$3 \cdot 141.37 = \pi (r^2)(15)$$

$$424.11 = 15\pi r^2$$

$$\frac{424.11}{15} = \frac{15r^2}{15}$$

$$28.27 = r^2$$

$$5.3 = r$$

$$d = 2 \cdot \text{radius} = 2(5.3) = 10.6 \text{ cm}$$