Name Answers Date

Geometry – Volume of Cylinders

For all volumes problems, use 3.14 for π

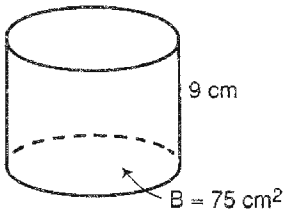
1) To find the **area of a circle** you would use the formula: A = πr^2

2) To find the **volume of a cylinder** you would use the formula: V = BH

or V = $\pi r^2 H$

Find the volumes of the following. SHOW ALL WORK.

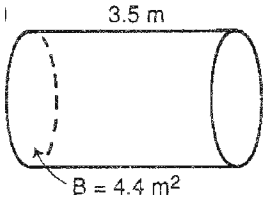
3)



$V = BH$
$= 75 \times 9$
$= 675$

V = $675\ cm^3$

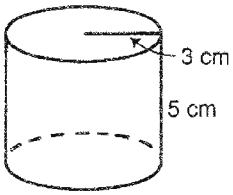
4)



$V = BH$
$= 4.4 \times 3.5$
$= 15.4$

V = $15.4\ m^3$

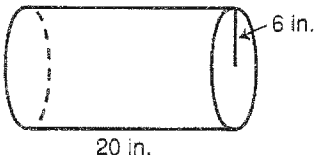
5)



$V = BH$
$= \pi r^2 H$
$= 3.14 \times 3^2 \times 5$
$= 3.14 \times 9 \times 5$
$= 141.3$

V = $141.3\ cm^3$

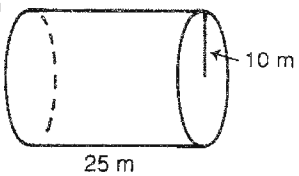
6)



$V = BH$
$= \pi r^2 H$
$= 3.14 \times 6^2 \times 20$
$= 3.14 \times 36 \times 20$
$= 2260.8$

V = $2260.8\ in^3$

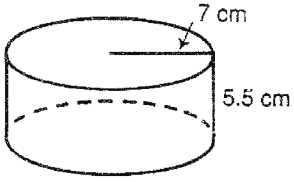
7)



$V = BH$
$= \pi r^2 H$
$= 3.14 \times 10^2 \times 25$
$= 3.14 \times 100 \times 25$
$= 7850$

V = $7850\ m^3$

8)



$V = BH$
$= \pi r^2 H$
$= 3.14 \times 7^2 \times 5.5$
$= 3.14 \times 49 \times 5.5$
$= 846.23\ cm^3$

V = $846.23\ cm^3$

Find the indicated measure.

9) Find the volume of a cylinder that has a diameter of 8 in and a height of 11 in.

$V = BH$
$= \pi r^2 H$
$= 3.14 \times 4^2 \times 11$
$= 3.14 \times 16 \times 11$
$= 552.64 in^3$

V = $552.64 in^3$

10) A cylindrical shaped barrel holds 628 cubic feet of water. If the *diameter* of the barrel is 10 feet, what is its height?

$V = \pi r^2 H$ $r = 5$
$628 = 3.14 \times 25 \times H$
$\frac{628}{7.85} = \frac{7.85H}{7.85}$
$8 = H$

H = 8 ft

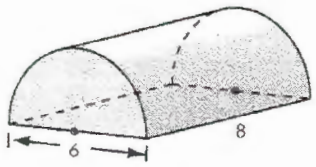
11) Find the ***radius*** of a cylinder that has a volume of 141.3 meters cubed and a height of 5 meters.

$V = BH$
$V = \pi r^2 H$
$141.3 = 3.14 \times r^2 \times 5$
$\frac{141.3}{15.7} = \frac{15.7 \times r^2}{15.7}$
$9 = r^2$
$3 = r$

r = 3 m

Find the volumes of the following. SHOW ALL WORK.

12)



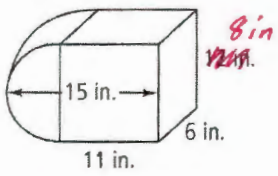
$r = 3$

$V = BH$
$V = \pi r^2 H$
$V = 3.14 \times 3^2 \times 8$
$V = 3.14 \times 9 \times 8$
$V = 226.08$

$\frac{226.08}{2} = 113.04$

V = $113.04 unit^3$

13)



$V = BH$
$= 11 \times 6 \times 8$
$= 528$

$\frac{301.44}{2} = 150.72$

$V = BH$
$= \pi r^2 H$
$= 3.14 \times 4^2 \times 6$
$= 301.44$

Total Volume $= 528 + 150.72$
$= 678.72$

V = $678.72 in^3$