VOLUME FORMULAS...

Prisms

Box

$V = A_{base} \times h$

$= l \times w \times h$

Cylinder

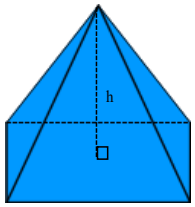
$V = A_{base} \times h$

$= \pi r^2 h$

Sphere

$A = 4\pi r^2$

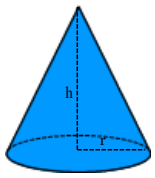
Pyramid



$V_{pyramid} = \frac{A_{base} \times height}{3}$

$= \frac{l \times w \times h}{3}$

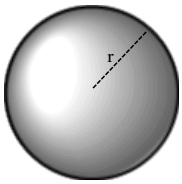
Cone



$V_{cone} = \frac{A_{base} \times height}{3}$

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

Sphere

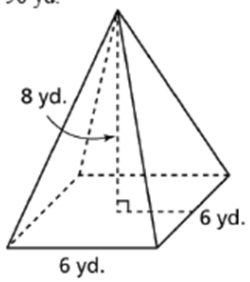


$V_{sphere} = 4/3\ \pi\ r^3$

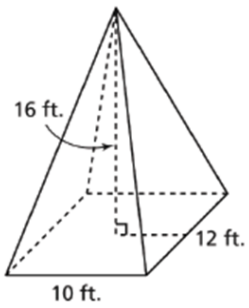
Oct 24-9:25 PM

EXERCISE: Find the volume of each of the following pyramids...

a) 96 yd.^{3}



b) 640 ft.^{3}



ERASE to get solution

$V = A_{base} \times h$

$= \frac{l \times w \times h}{3}$

$= \frac{(10)(12)(16)}{3}$

$= 640\ ft^3$

$V = \frac{A_{base} \times h}{3}$

$= \frac{l \times w \times h}{3}$

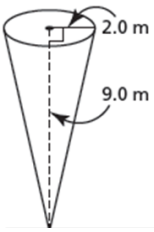
$= \frac{6 \times 6 \times 8}{3}$

$= 96\ yd^3$

Oct 24-9:37 PM

EXERCISE: Find the volume of each of the following cones...

a) 37.7 m^3



$V = \frac{A_{base} \times h}{3}$

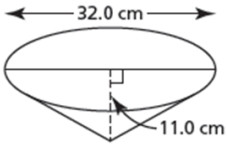
$= \frac{\pi r^2 h}{3}$

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

$= 12\pi$

$= 37.7 m^3$

b) 2948.9 cm^3



ERASE to get solution

$V = \frac{A_{base} \times h}{3}$

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

$= \frac{\pi (16)^2 (11)}{3}$

$= 2948.9 cm^3$

Oct 24-9:37 PM

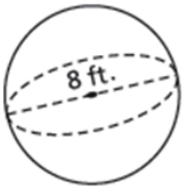
EXERCISE: Find the volume of each of the following spheres...

1) 17 m^3

b)

2) 268 $ft.^3$

c)



ERASE to get solution

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

$= \frac{4\pi (1.6)^3}{3}$

$\doteq 17.2 m^3$

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

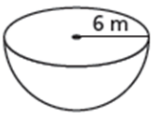
$= \frac{4}{3}\pi (4)^3$

$\doteq 268.1 ft^3$

EXERCISE: Find the volume of each of the following hemispheres...

1) 452 m^3

a)

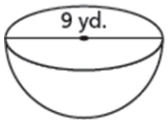


$V = \frac{4\pi r^3}{6}$

$= \frac{4\pi (6)^3}{6}$

$\doteq 452.4 m^2$

2) 191 $yd.^3$



ERASE to get solution

$V = \frac{4\pi r^3}{6}$

$= \frac{4\pi (4.5)^3}{6}$

$\doteq 190.9 yd^3$

Oct 24-9:37 PM

19. A fitness ball is delivered in a flat package with a hand pump. The pump inflates the ball at a rate of 280 cm^3 per pump, to a diameter of 28 cm. How many pumps are needed to inflate the ball? Justify your answer.

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

$= \frac{4\pi(14)^3}{3}$

$\doteq 11494.04032\ cm^3$

$\#\ Pumps = \frac{11494.04}{280}$

$\doteq 41.050$

42 Pumps

1.6 Surface Area and Volume of a Sphere

Exercise #19

20. A pail of cookie dough is cylindrical, with diameter 17 cm and height 13 cm. A scoop makes a sphere of cookie dough with diameter 5 cm. How many cookies can be made from this pail of dough?

20. 45 cookies

$V = \pi r^2 h$

$= \pi(8.5)^2(13)$

$= 939.25\pi$

$\doteq 2950.7 cm^3$

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

$= \frac{4\pi(2.5)^3}{3}$

$\doteq 65.4 cm^3$

$\#\ cookies = \frac{2950.7}{65.4}$

$\doteq 45.1$ 45 cookies

1.6 Surface Area and Volume of a Sphere

Exercise #20

HOMEWORK... #3,4,5

Worksheet - Volume of Cones_Pyramids_Spheres.pdf

1. a) 

$A = \pi r^2 + \pi r s$

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

+

2.

b) 

$A = 2\pi r^2 + 2\pi r h$

$V = \pi r^2 h$

c) 

$A = 2lw + 2lh + 2wh$

$V = A_{base} \times h$

$= l \times w \times h$

d) 

$A = 4\pi r^2$

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

Oct 28-3:45 PM

Attachments

6.4 - Build Your Skills Solutions.pdf

Chapter 6 Surface Area, Volume, and Capacity, Practice Your New Skills.pdf

Chapter 6 Sample Test.pdf

Chapter 6 Sample Test Answers.pdf

Worksheet - Volume of Cones_Pyramids_Spheres.pdf