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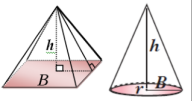
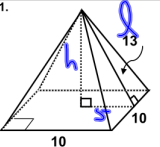

TERM	DESCRIPTION	FORMULA
VOLUME	The amount of <u>space</u> enclosed in the interior of a three-dimensional object. For a pyramid and a cone the volume is the product of the area of the <u>base</u> and the <u>height</u> .	

FIGURE 1. 

QUICK CHECK: 

NAME: Sq Py r

B: 100 u²

FORMULA: $V = \frac{1}{3} B h$

$V = \frac{1}{3} (100) 13$

$h^2 + 5^2 = 13^2$

$h^2 + 25 = 169$

$h^2 = 144$

$h = 12$

$V = 400 u^3$

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NAME: Hex Prism

B: $\frac{1}{2} a P$

FORMULA: $V = \frac{1}{3} B h$

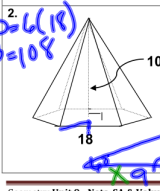
$V = \frac{1}{3} (486) 10$

$V = 1620 u^3$

$B = 486 u^2$

$P = 6(18)$


$P = 108$



Geometry Unit 9 - Nets, SA & Volume

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Notes: VOLUME OF PYRAMIDS, CONES, AND SPHERES

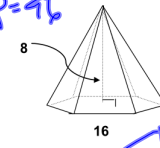
FIGURE	BASE CALCULATIONS	VOLUME
QUICK CHECK: 	NAME: <u></u>	FORMULA: <u></u>
B: <u></u>		

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QUICK CHECK: 

NAME: Hex Prism

B: $\frac{1}{2} (8) 96$

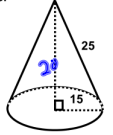
FORMULA: $V = \frac{1}{3} B h$

$V = \frac{1}{3} (384) 8$

$V = 1024 u^3$

$B = 384 u^2$

$B = \frac{1}{2} a P$

FIGURE 3. 

NAME: Cone

B: πr^2

FORMULA: $V = \frac{1}{3} B h$

$V = \frac{1}{3} (225\pi) 20$

$V = 1500\pi u^3$

$B = 225\pi u^2$

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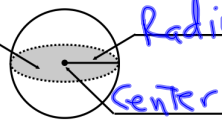
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center great circle radius

Using the Word Bank above, label the parts of the sphere shown below.

Great Circle  Radius

Center

TERM	DEFINITION	FORMULA
<u>Area</u>	A <u>great circle</u> of a sphere that has the same radius and center as the sphere.	<u>$A = \pi r^2$</u>
<u>Surface Area</u>	The amount of <u>area</u> on the <u>surface</u> of a sphere.	<u>$SA = 4\pi r^2$</u>
<u>Volume</u>	The amount of <u>space</u> contained in the interior of a three-dimensional object.	<u>$V = \frac{4}{3}\pi r^3$</u>

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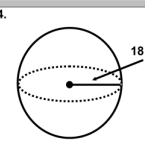
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interior of a three-dimensional object

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

FIGURE 4. 

EXACT AREA = $4\pi r^2$

$S = 4\pi (18)^2$

$S = 4\pi (324)$

$S = 1296\pi \text{ cm}^2$

APPROXIMATE AREA = $18 \wedge 3 = 5832$

EXACT VOLUME = $\frac{4}{3}\pi r^3$

$V = \frac{4}{3}\pi (18)^3$

$V = \frac{4}{3}\pi (5832)$

$V = \frac{4}{3}\pi (5832)$

APPROXIMATE VOLUME = $V = 1116\pi \text{ cm}^3$

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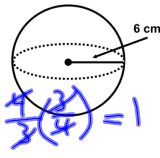
Notes: VOLUME OF PYRAMIDS, CONES, AND SPHERES

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QUICK CHECK: 

EXACT AREA = $4\pi r^2$

$S = 4\pi (36)$

$S = 144\pi \text{ cm}^2$

APPROXIMATE AREA = $\frac{4}{3} (4) = 1$

EXACT VOLUME = $\frac{4}{3}\pi r^3$

$V = \frac{4}{3}\pi (216)$

$V = 288\pi \text{ cm}^3$

APPROXIMATE VOLUME = $1000 \wedge (\frac{1}{3})$

EXAMPLE 5: If a sphere has a volume of $\frac{4000\pi}{3}$ cubic units, what is its surface area?

$\frac{4000\pi}{3} = \frac{4}{3}\pi r^3$

$\frac{4000}{3} = \frac{4}{3} r^3$

$1000 = r^3$

$10 = r$

QUICK CHECK: If a sphere has a volume of $\frac{32\pi}{3}$ cubic units, what is its surface area?

$\frac{32\pi}{3} = \frac{4}{3}\pi r^3$

$32 = 4 r^3$

$8 = r^3$

$2 = r$

$S = 4\pi (2)^2$

$S = 4\pi (4)$

$S = 16\pi \text{ cm}^2$

Apr 22-11:06 AM