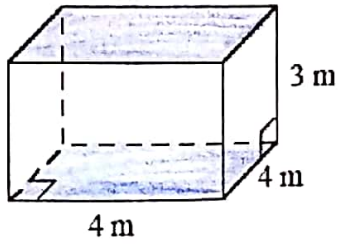
February 21

GUIDED NOTES: Volume

Volume – the amount of one shape stacked up inside of a 3D figure

V_{prism} = area of base • height of prism

EX1.



base: rectangle

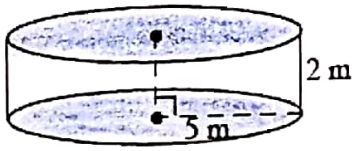
$A = 4 \cdot 4$

$A = 16$

$V = 16 \cdot 3$

$V = 48\ m^3$

EX2.



base: circle

$A = \pi \cdot 5^2$

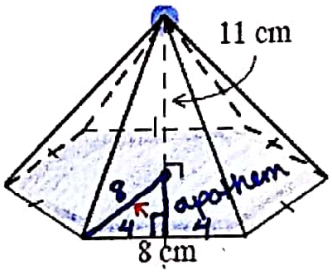
$A = 78.54$

$V = 78.54 \cdot 2$

$V = 157.08\ m^3$

$V_{pyramid} = \frac{1}{3}$ • area of base • height of pyramid

EX3



$a^2 + 4^2 = 8^2$

$a^2 + 16 = 64$

$-16 \quad -16$

$a^2 = 48$

$a = 6.93$

$P = 8 \cdot 6$

$P = 48$

base: hexagon

$A = \frac{1}{2} \cdot a \cdot P$

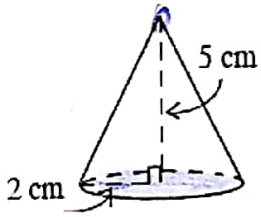
$A = \frac{1}{2} \cdot 6.93 \cdot 48$

$A = 166.28$

$V = \frac{1}{3} \cdot 166.28 \cdot 11$

$V = 609.68\ cm^3$

EX4.



base: circle

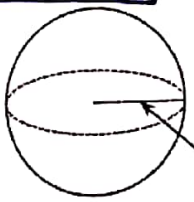
$A = \pi \cdot 2^2$

$A = 12.57$

$V = \frac{1}{3} \cdot 12.57 \cdot 5$

$V = 20.94\ cm^3$

EX5.



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

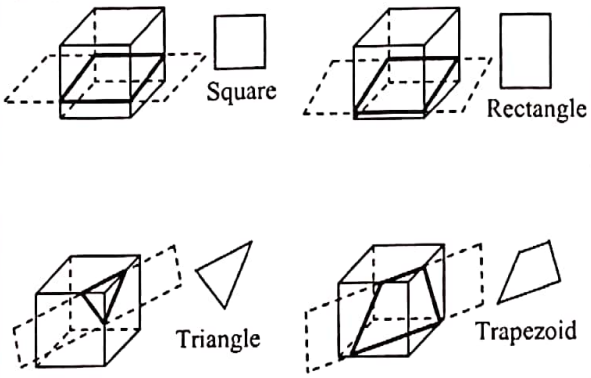
$V = \frac{4}{3} \cdot \pi \cdot 3^3$

$V = 113.10\ ft^3$

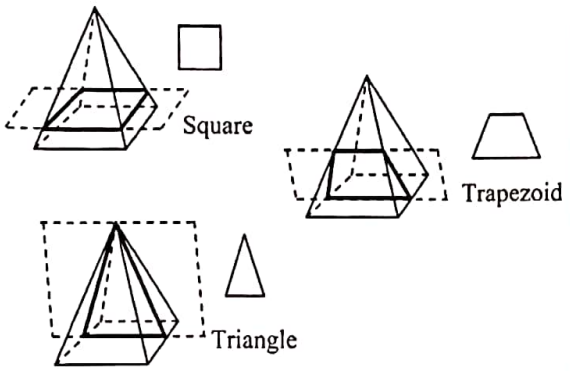
Don't Be Cross With Me

The cross section of a three-dimensional figure shows the intersection of the three-dimensional figure with a plane.

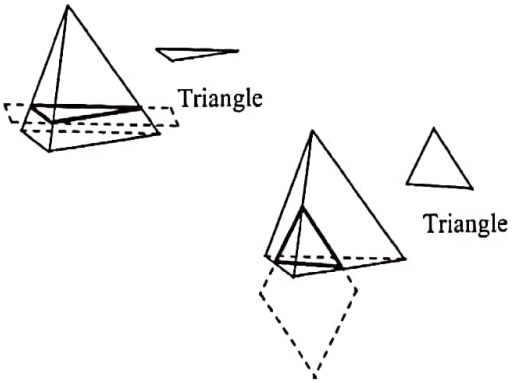
Cube



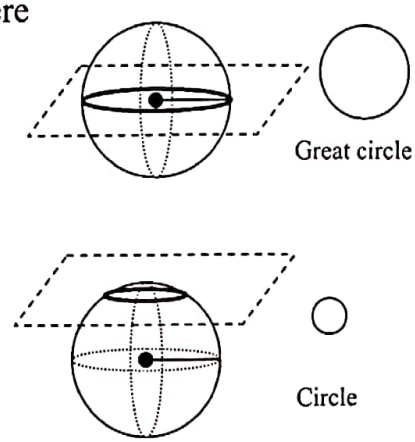
Square Pyramid



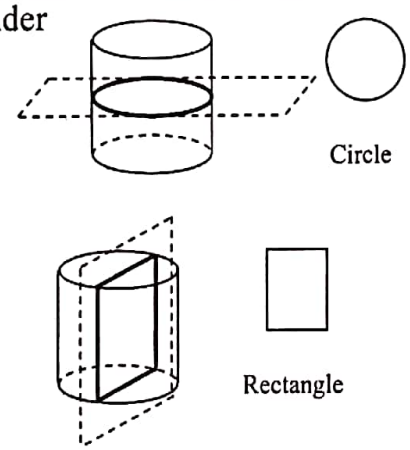
Triangular Pyramid



Sphere



Cylinder



Cone