

Surface Area and Volume of a Right Prism

$$\underline{S = 2B + Ph}$$

S=Surface Area of Prism

$$\underline{V = Bh}$$

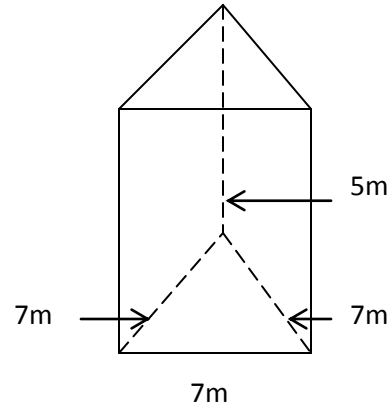
B=Area of Base

P=Perimeter of Base

h=height of Prism

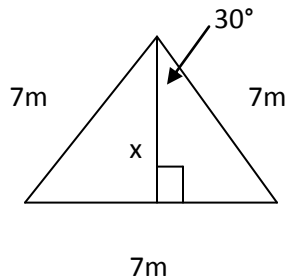
V=Volume of Prism

x = height of Triangle



Surface Area

$$P = 21m$$



$$\cos 30 = \frac{x}{7}$$

$$.8660 = \frac{x}{7}$$

$$x = 6.06m$$

$$B = \frac{1}{2} (6.06)(7)$$

$$B = 21.21m$$

$$S = 2(B) + Ph$$

$$S = 2(21.21) + 21(5)$$

$$S = 147.42m^2$$

Volume

$$V = Bh$$

$$V = (21.21)(5)$$

$$V = 106.05m^3$$

Surface Area and Volume of a Cylinder

$S = 2B + Ch$

S = Surface Area of a Cylinder

$V = Bh$

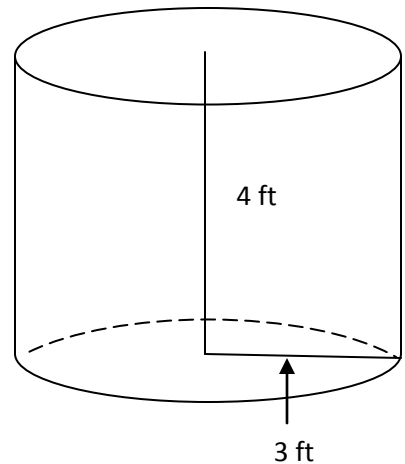
B = area of Base

C = Circumference

V = volume of Cylinder

h = height of Cylinder

r = radius



Surface Area

$$B = \pi r^2$$

$$B = 3.14(3^2)$$

$$B = 28.26 \text{ ft}^2$$

$$C = 2\pi r$$

$$C = 2(3.14)(3)$$

$$C = 18.84 \text{ ft}$$

$$S = 2B + Ch$$

$$S = 2(28.26) + 18.84(4)$$

$$S = 131.88 \text{ ft}^2$$

Volume

$$V = Bh$$

$$V = 28.26(4)$$

$$V = 113.04 \text{ ft}^3$$

Surface Area and Volume of a Regular Pyramid

$$S = B + \frac{1}{2} P l$$

S = Surface Area of the Pyramid

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

V = Volume of the Pyramid

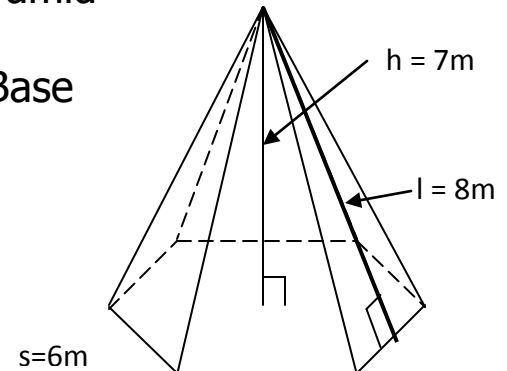
P = Perimeter of the Base

l = slant height

B = Area of the Base

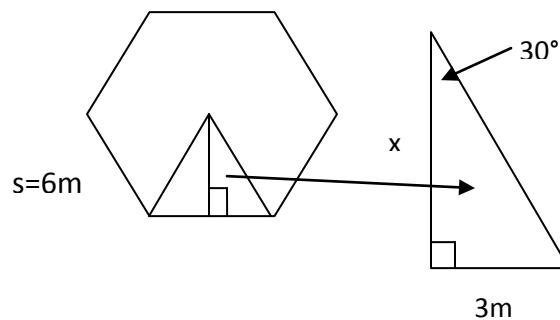
h = height of Pyramid

s = side of Hexagonal Base



Surface Area

$$P = 36m$$



$$\begin{aligned} \tan 30 &= \frac{3}{x} \\ .5774 &= \frac{3}{x} \\ x &= 5.2m \end{aligned}$$

$$\begin{aligned} \text{Area of triangle} &= \frac{1}{2}(3)(5.2) \\ \text{Area of triangle} &= 7.8m^2 \end{aligned}$$

$$\begin{aligned} B &= 12(7.8) \\ &= (12 \text{ triangles in Base}) \\ B &= 93.6m^2 \end{aligned}$$

$$S = 93.6 + \frac{1}{2}(36)(8)$$

$$S = 237.6m^2$$

Volume

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

$$V = \frac{1}{3} (93.6)(7)$$

$$V = 218.4m^3$$

Surface Area and Volume of a Cone

$$\underline{S = B + \pi r l}$$

S = Surface Area of Cone

$$\underline{V = \frac{1}{3} B h}$$

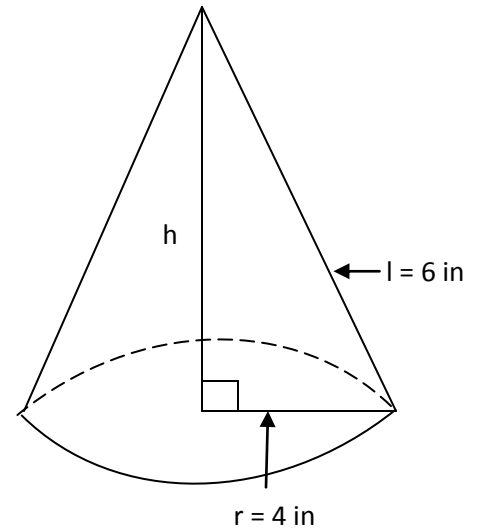
V = Volume of Cone

B = Area of Base

r = radius

l = slant height

h = height of Cone



Surface Area

$$B = \pi r^2$$

$$B = (3.14)(4^2)$$

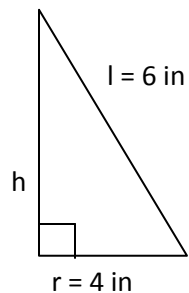
$$B = 50.24 \text{ in}^2$$

$$S = B + \pi r l$$

$$S = 50.24 + (3.14)(4)(6)$$

$$\underline{S = 125.6 \text{ in}^2}$$

Volume



$$a^2 + b^2 = c^2$$

$$h^2 + 4^2 = 6^2$$

$$h^2 = 20$$

$$h = 4.47$$

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

$$V = \frac{1}{3} (50.24)(4.47)$$

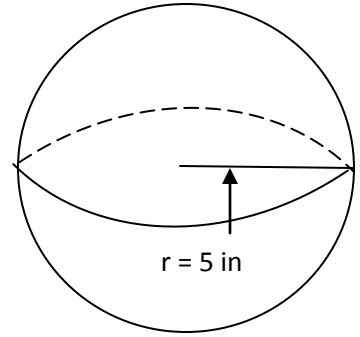
$$\underline{V = 74.86 \text{ in}^3}$$

Surface Area and Volume of a Sphere

$S = 4 \pi r^2$ S = Surface Area of a Sphere

$V = \frac{4}{3} \pi r^3$ V = Volume of a Sphere

r = radius



Surface Area

$$S = 4 \pi r^2$$

$$S = 4(3.14)(5^2)$$

$$S = 314\text{in}^2$$

Volume

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

$$V = \frac{4}{3} (3.14)(5^3)$$

$$V = 523.33\text{in}^3$$