M10 - 2.1 - Cone Surface Area/Volume Notes

Cone Surface Area

Slant height (s)
$s = 5\ cm$
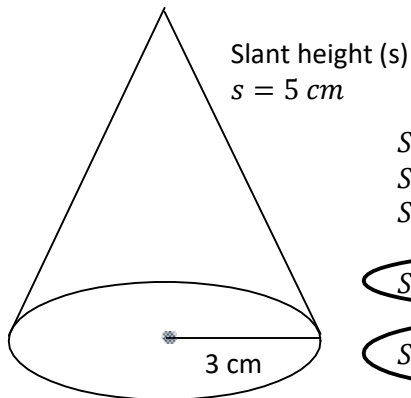
$SA = \pi r^2 + \pi rs$
$SA = (3.14)(3)^2 + (3.14)(3)(5)$
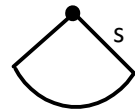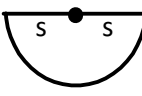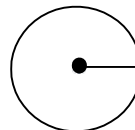$SA = 28.27 + 47.12$

$SA = 75.40\ cm^2$

$SA = 24\pi\ cm^2$ Terms of Pie

3 cm

Net Area

s s

s s

$A = \pi r^2$

s

$A = \pi rs$
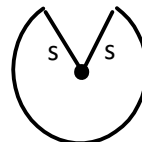
Pythagoras (Same as Above)
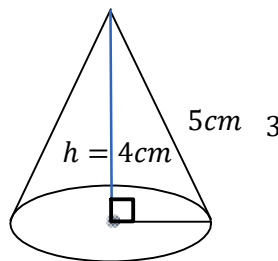
$h = 4cm$ 4 c

3 cm 3
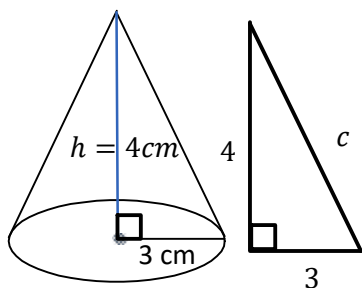
$a^2 + b^2 = c^2$
$3^2 + 4^2 = c^2$
$9 + 16 = c^2$
$c^2 = 25$
$c = \sqrt{25}$

$c = 5$

$h = 4cm$ $5cm$ 3 5

$a^2 + b^2 = c^2$
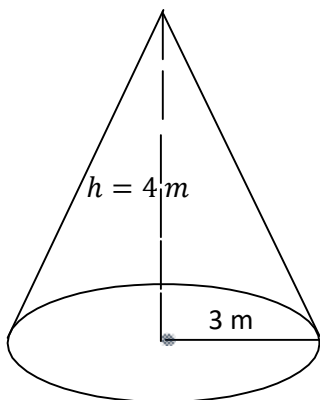$3^2 + b^2 = 5^2$
$9 + b^2 = 25$
$-9 \qquad -9$
$b^2 = 16$
$\sqrt{b^2} = \sqrt{16}$

b

$b = 4$

Cone Volume

$h = 4\ m$

3 m

$V = \dfrac{1}{3} \times (area\ of\ base) \times h$

$V = \dfrac{1}{3} \times (\pi r^2) \times h$

$V = \dfrac{1}{3} \times ((3.14)(3)^2) \times 4$

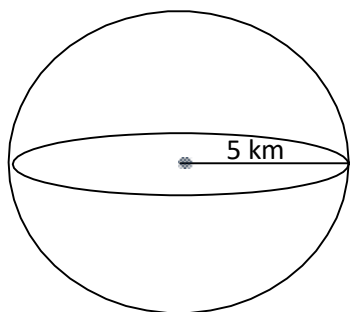$V = 37.7\ m^3$

$V = 12\pi\ m^3$ Terms of Pie

$V = \pi r^2 h$

Sphere Surface Area and Volume

5 km

$SA = 4\pi r^2$
$SA = 4(3.14)(5)^2$

$SA = 314\ km^2$

$SA = 100\pi\ km^2$ Terms of Pie

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

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

$V = 523.6\ km^3$

$V = \dfrac{100}{3} \pi\ km^3$