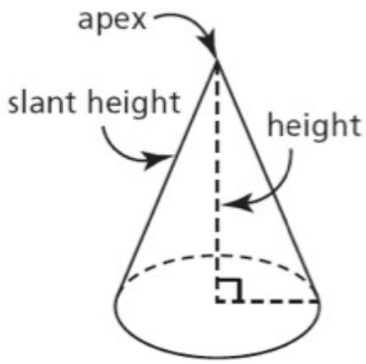
Surface Area of Right Cones

Right cone = a 3D object that has a circular base and a curved surface.

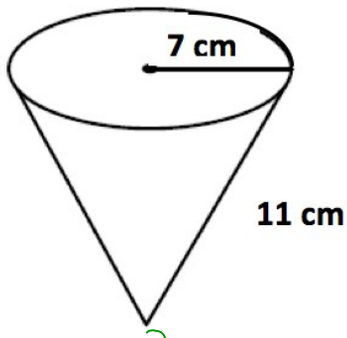


$$SA = \pi r^2 + \pi rs$$
base sides

The **surface area of a right cone** is the lateral area + base area.

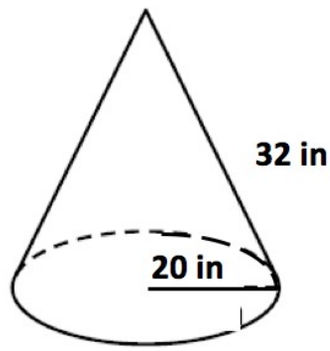
Ex 1: Find the surface area of each right cone:

a)



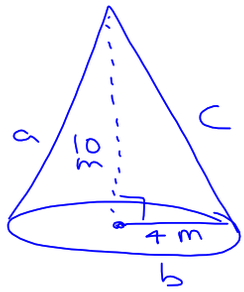
$SA = \pi(7)^2 + \pi(7)(11)$
$= 153.94 + 241.90$
$= 395.84 \text{ cm}^2$

b)



$SA = \pi(20)^2 + \pi(20)(32)$
$= 3267.26 \text{ in}^2$

Ex 2.
A right cone has a base radius of 4 m and a height of 10 m. Calculate the lateral surface area and total surface area of this cone.



$4^2 + 10^2 = c^2$

$\sqrt{116} = c$

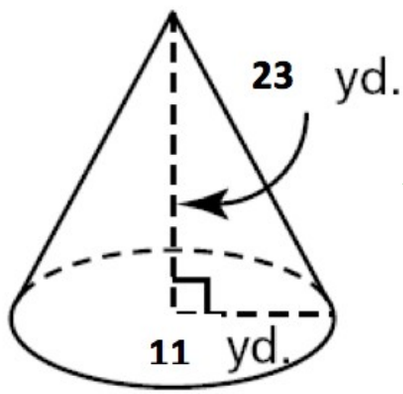
$c = 10.77$

$SA = \pi(4)^2 + \pi(4)(10.77)$ (lateral)

$= 185.61\ m^2$

$SA_{lateral} = 135.34\ m^2$

Ex 3:
Find the surface area of the right cone.



$11^2 + 23^2 = c^2$

$\sqrt{650} = c$

$c = 25.5$

$SA = \pi(11)^2 + \pi(11)(25.5)$

$= 380.13 + 881.22$

$= 1261.35\ yd^2$

p. 34
6, 7, 8b, 11, 12

Quiz → Surface Area Monday