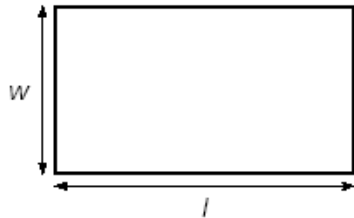


Physics Skills

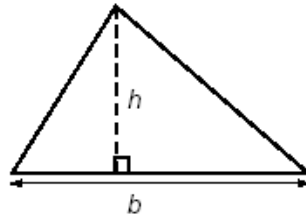
PART IV. GEOMETRY/TRIGONOMETRY

Area

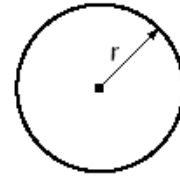
Area, A , is the number of square units needed to cover a surface. Some common shapes and the formulas for calculating the area of each shape are shown below:



Rectangle
 $A = lw$



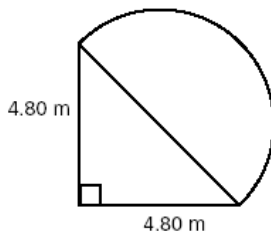
Triangle
 $A = \frac{1}{2}bh$



Circle
 $A = \pi r^2$

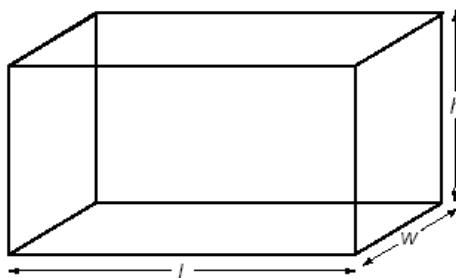
Find the area of each of the following shapes described below.

1. A rectangular driveway that is 3.05 m wide and 64.0 m long
2. Circle with $r = 8.00$ cm
3. A shape formed by the figure below

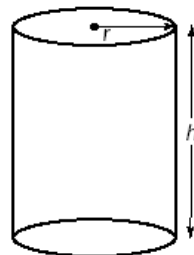


Volume

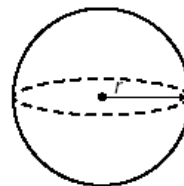
The volume, V , of a three-dimensional object is the amount of space it occupies. The units for volume are length units cubed, such as m^3 or cm^3 . Some common formulas for volume are shown below:



Rectangular solid
 $V = lwh$



Right circular cylinder
 $V = \pi r^2 h$



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

Find the volume of the shape:

4. A physics laboratory workbook with
 $l = 27.7$ cm, $w = 21.6$ cm, and $h = 3.7$ cm
5. A cylindrical juice glass with:
diameter = 6.5 cm and $h = 11.0$ cm
6. A basketball with diameter = 22 cm

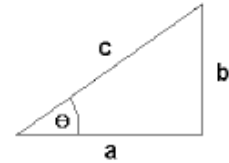
Using right triangle trigonometry and the Pythagorean Theorem solve the following.
Your calculator must be in degree mode. SHOW ALL YOUR WORK!

SOH CAH TOA

$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$\tan \theta = \frac{\text{opp}}{\text{adj}}$$



7. $\theta = 55^\circ$ and $c = 32$ m, solve for a and b .

8. $\theta = 45^\circ$ and $a = 15$ m/s, solve for b and c .

9. $b = 17.8$ m and $\theta = 65^\circ$, solve for a and c .

10. $a = 250$ m and $b = 180$ m, solve for θ and c .

11. $a = 25$ cm and $c = 32$ cm, solve for b and θ .