3.3

Geometric formulas

Square

$A = s^2$

$P = 4s$

Rectangle

$A = lw$

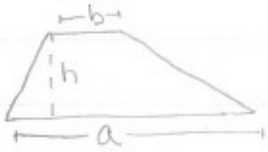
$P = 2l + 2w$

Triangle

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

Trapezoid

$A = \frac{1}{2}h(a+b)$



Circle

$A = \pi r^2$

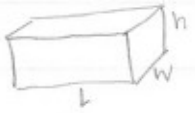
$C = 2\pi r$

Cube

$V = s^3$

Rectangular Solid

$V = lwh$



Sphere

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

Cone

$V = \frac{1}{3}\pi r^2 h$

Sum of the angles of a Δ is $180°$

If measure of an angle is x

then complement is $90 - x$

and supplement is $180 - x$

Solving Geometric Problems

(ex) You have a rectangular garden which has a length 2 ft less than twice the width, it takes 40 ft of fence to enclose the garden. What are the dimensions?

$L = 2w - 3$

so 

$P = 2(2w-2) + 2w = 40$

$4w - 4 + 2w = 40$

$6w - 4 = 40$

$6w = 36$

$w = 6 \Rightarrow L = 2(6) - 3 = 12 - 3 = 9$

$\boxed{6 \times 9}$

(ex) A perfectly round snowball has a radius of 3 in. It melts away until it's radius is 1 in. How many times bigger was the original volume?

$V_{3in} = \frac{4}{3}\pi(3)^2 = \frac{4}{3}\pi(9) = \frac{4}{3}(9)\pi = 12\pi \approx 37.699\ldots$

$V_{1in} = \frac{4}{3}\pi(1)^2 = \frac{4}{3}\pi \approx 4.18879\ldots$

the original had 9 times the volume!