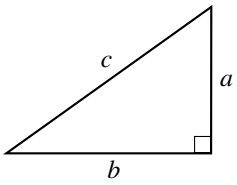
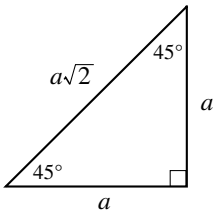
MATH 30 FORMULA SHEET

Triangles

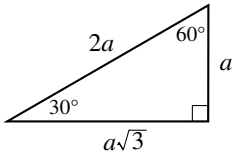


Pythagorean Theorem

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

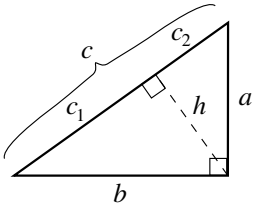


Isosceles Rt △



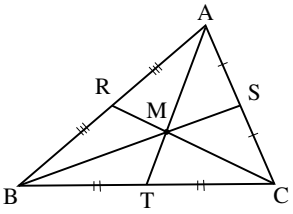
30-60-90°

Right Triangle



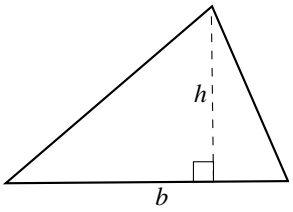
Rt △ Geometric Mean

$\frac{c}{a} = \frac{a}{c_2}$; $\frac{c}{b} = \frac{b}{c_1}$; $\frac{c_1}{h} = \frac{h}{c_2}$



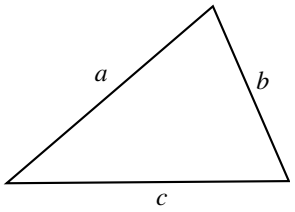
Centroid of a Triangle

AM = $\frac{2}{3}$(AT); BM = $\frac{2}{3}$(BS);
CM = $\frac{2}{3}$(CR)



Area of a Triangle

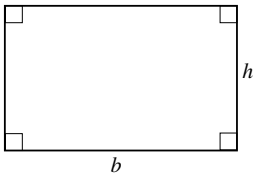
$A = \frac{1}{2}bh$



Heron's Formula for Area

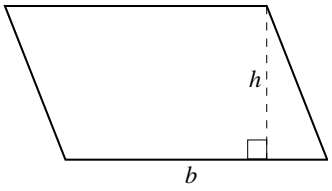
$A = \sqrt{s(s-a)(s-b)(s-b)}$
where $s = \frac{1}{2}(a+b+c)$

Area of Plane Figures



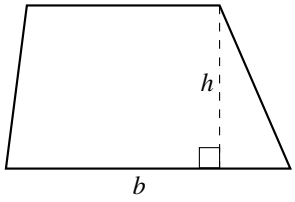
Rectangle

$A = bh$



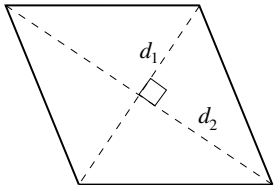
Parallelogram

$A = bh$



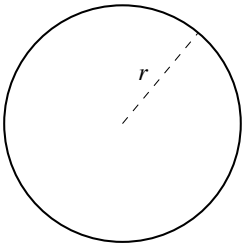
Trapezoid

$A = \frac{1}{2}(b_1 + b_2)h$



Rhombus or Kite

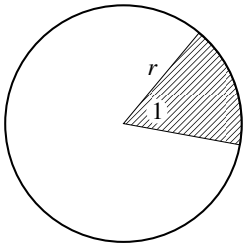
$A = \frac{1}{2}d_1 d_2$



Circle

$A = \pi r^2$

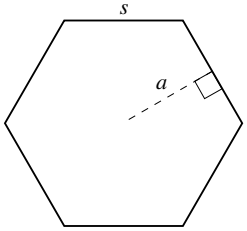
$P = 2\pi r$



Sector

$A = \frac{\text{m}\angle 1}{360°}\pi r^2$

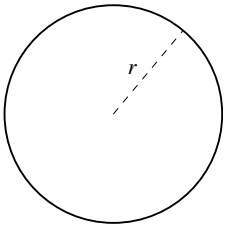
$P = 2r + \frac{\text{m}\angle 1}{360°}2\pi r$



Regular Polygon (n sides)

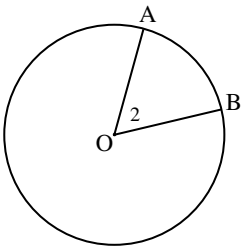
$A = \frac{1}{2}aP = \frac{1}{2}a(ns)$

Angles and Lengths Relating to Circles



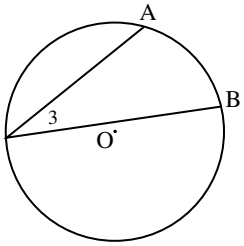
Cicumference

$C = 2\pi r$



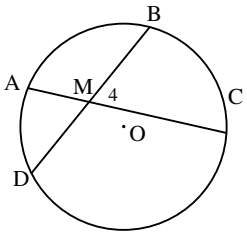
Central Angle

$m\angle 2 = m\overset{\frown}{AB}$



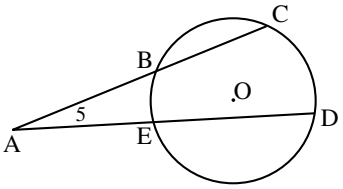
Inscribed Angle

$m\angle 3 = \frac{1}{2}m\overset{\frown}{AB}$



$m\angle 4 = \frac{1}{2}(m\overset{\frown}{AD} + m\overset{\frown}{BC})$

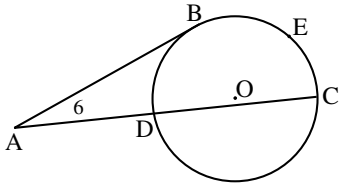
$BM \cdot MD = AM \cdot MC$



Two Secants

$m\angle 5 = \frac{1}{2}(m\overset{\frown}{CD} - m\overset{\frown}{BE})$

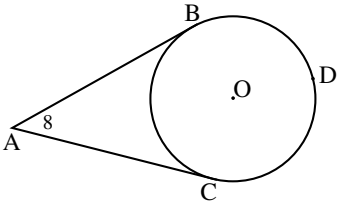
$AC \cdot AB = AD \cdot AE$



Secant & Tangent

$m\angle 6 = \frac{1}{2}(m\overset{\frown}{BEC} - m\overset{\frown}{BD})$

$AD \cdot AC = AB^2$

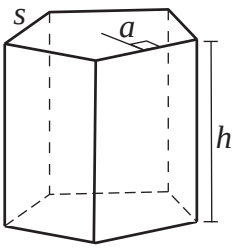


Two Tangents

$m\angle 8 = \frac{1}{2}(m\overset{\frown}{CDB} - m\overset{\frown}{BC})$

$AB = AC$

Polyhedrons, Cylinders, Cones, & Spheres

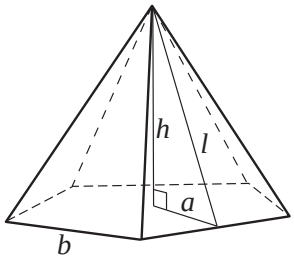


Prism

$A_L = Ph = (ns)h$

$A_T = 2B + A_L$

$V = Bh$

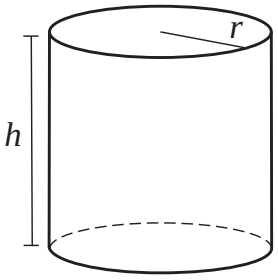


Pyramid

$A_L = \frac{1}{2}Pl = (\frac{1}{2}bl)n$

$A_T = B + A_L$

$V = \frac{1}{3}Bh$

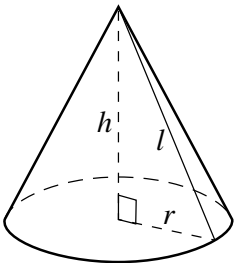


Cylinder

$A_L = 2\pi rh$

$A_T = A_L + 2\pi r^2$

$V = \pi r^2 h$

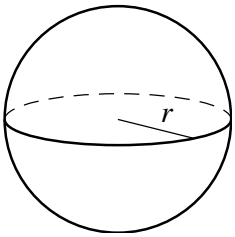


Cone

$A_L = \pi rl$

$A_T = A_L + \pi r^2$

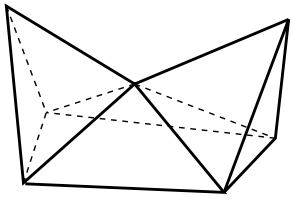
$V = \frac{1}{3}\pi r^2 h$



Sphere

$A = 4\pi r^2$

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



Euler's Formula

$V + F = E + 2$