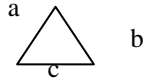
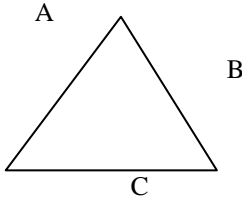


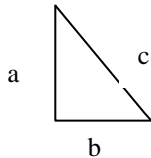
MGF1106 Liberal Arts Mathematics I
Geometry Formulas

Similar triangles- if corresponding angles are equal, then corresponding sides are in proportion.



$$\frac{A}{a} = \frac{B}{b} \quad \text{or} \quad \frac{A}{a} = \frac{C}{c}$$

Pythagorean Theorem - the two shorter legs of a right triangle squared and added equal the longest leg (hypotenuse) squared.



working forms: $c = \sqrt{a^2 + b^2}$

$$a = \sqrt{c^2 - b^2}$$

Perimeter

rectangle	$P = 2L + 2W$
square	$P = 4s$
parallelogram	$P = 2L + 2W$
trapezoid	$P = s_1 + s_2 + s_3 + s_4$
triangle	$P = s_1 + s_2 + s_3$
circle	$C = 2\pi r = d\pi$

Area

rectangle	$A = LW$
square	$A = s^2$
parallelogram	$A = Bh$
trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
triangle	$A = \frac{1}{2}bh$
circle	$A = \pi r^2$

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

Volume

Box	$V = LWH$
Cube	$V = s^3$
Sphere	$V = \frac{4}{3}\pi r^3$
Cylinder	$V = \pi r^2 h$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}Bh$

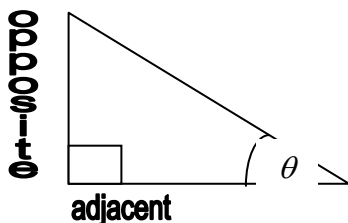
Conversions

$1m^3 = 1000L = 1KL$
 $1ft^3 \approx 7.48gal$
 $1L = 1000ml = 1000cm^3$

Surface Area

Box	$SA = 2lw + 2lh + 2wh$
Cylinder	$SA = 2\pi r^2 + 2\pi rh$
Sphere	$SA = 4\pi r^2$
Cone	$SA = \pi r\sqrt{r^2 + h^2} + \pi r^2$

Trigonometric ratios for right triangles



$$\sin \theta = \frac{opp}{hyp} \quad \cos \theta = \frac{adj}{hyp} \quad \tan \theta = \frac{opp}{adj}$$