FORMULAS

PERIMETER	
Square	$P = 4l$
Rectangle	$P = 2l + 2w$
Circle (Circumference)	$C = 2\pi r \quad or \quad C = \pi d$

AREA	
Square	$A = s^2$
Rectangle	$A = l * w$
Triangle	$A = \frac{1}{2}bh$
	$A = \frac{1}{2}ab * sin\ c$
Parallelogram	$A = b * h$
Trapezium	$A = \frac{a+b}{2} * h$
Circle	$A = \pi r^2$
Semicircle	$A = \frac{\pi r^2}{2}$

SURFACE AREA	
Sphere	$A = 4\pi r^2$
Cone	$A = \pi rl$
Cylinder	$A = 2\pi rh$

VOLUME	
Cube	$V = s^3$
Cuboid	$V = l * w * h$
Cylinder	$V = \pi r^2 h$
Prism	$V = area\ of\ cross\ section * l$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$
Pyramid	$V = \frac{1}{3}area\ of\ base * h$

TRIGNOMETRY			
Sine Rule	$\frac{a}{SinA} = \frac{b}{SinB} = \frac{c}{SinC}$		
Cosine Rule	$a^2 = ab^2 + c^2 - 2bcCosA$		
Trig Ratios	Tan	Sin	Cos
	$\frac{Opp}{Adj}$	$\frac{Opp}{Hyp}$	$\frac{Adj}{Hyp}$
Pythagoras	$a^2 + b^2 = h^2$		

GRAPHS	
Slope (St. Line)	$\frac{y_2 - y_1}{x_2 - x_1}$
MidPoint of Line	$\left(\frac{x_1 + x_2}{2}\right), \left(\frac{y_1 + y_2}{2}\right)$

QUADRATIC FORMULA
$x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$

TRANSFORMATIONS		
Reflection	x-axis	$(x, y) = (x, -y)$
	y-axis	$(x, y) = (-x, y)$
	y = x	$(x, y) = (y, x)$
	y = − x	$(x, y) = (-y, -x)$
Rotation	90°	$(x, y) = (-y, x)$
	180°	$(x, y) = (-x, -y)$
	270°	$(x, y) = (y, -x)$
Translation	$T_{(a,b)}$	$(x + a, y + b)$
Enlargement	$E_{(k)}$	(kx, ky)

Polyhedra	Base	No. of faces	No. of vertices	No. of edges	Nets
cube		6	8	12	
triangular prism		5	6	9	
square prism		6	8	12	
rectangular prism		6	8	12	
pentagonal prism		7	10	15	
hexagonal prism		8	12	18	
octagonal prism		10	16	24	
triangular pyramid		4	4	6	
square pyramid		5	5	8	
rectangular pyramid		5	5	8	
pentagonal pyramid		6	6	10	
hexagonal pyramid		7	7	12	
octagonal pyramid		9	9	16	