Pre Calculus 11 Formula Sheet

Quadratics	**Sequences and Series**
Standard: $y = ax^2 + bx + c$	Arithmetic
Factored: $y = a(x - r)(x - s)$	$t_n = t_1 + (n-1)d$
Vertex: $y = a(x - p)^2 + q$	$S_n = \frac{n}{2}(t_1 + t_n)$
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$S_n = \frac{n}{2}(2t_1 + (n-1)d)$
Trigonometry	Geometric
$\sin\theta = \frac{opposite}{hypotenuse}$	$t_n = t_1 r^{n-1}$
$\cos\theta = \frac{adjacent}{hypotenuse}$	$S_n = \frac{t_1(r^n - 1)}{r - 1} = \frac{t_1(1 - r^n)}{1 - r}$
$\tan\theta = \frac{opposite}{adjacent}$	$S_\infty = \frac{t_1}{1-r}, -1 < r < 1$
$c^2 = a^2 + b^2 - 2ab\cos C$	
$\cos C = \frac{a^2 + b^2 - c^2}{2ab}$	
$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$	

θ	0°	30°	45°	60°	90°
$\sin\theta$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
$\cos\theta$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
$\tan\theta$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	undefined