MCR3U Formula Sheet

$y = mx + b$	$y = ax^2 + bx + c$	$y = a(x - h)^2 + k$
$g(x) = af[k(x - d)] + c$	$f(x) = a(x - r)(x - s)$	$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$
$x^2 + y^2 = r^2$	$\sin\theta = \frac{y}{r}$	$\cos\theta = \frac{x}{r}$
$\tan\theta = \frac{y}{x}$	$a^2 = b^2 + c^2 - 2bc\cos A$	$\frac{a}{sinA} = \frac{b}{sinB} = \frac{c}{sinC}$
$t_n = t_{n-1} + d$	$t_n = a + (n - 1)d$	$t_n = t_{n-1}\, r$
$t_n = a\ r^{n-1}$	$S_n = \frac{n}{2}(2a + (n - 1)d)$	$S_n = \frac{a(r^n-1)}{r-1}$
$A = P(1 + rt)$	$I = Prt$	$A = P(1 + i)^n$
$PV = \frac{A}{(1+i)^n}$	$FV = R\left(\frac{(1+i)^n-1}{i}\right)$	$PV = R\left(\frac{1-(1+i)^{-n}}{i}\right)$

Based on Definitions	**Derived From Relationships**	
Reciprocal Identities	Quotient Identities	Pythagorean Identities
$\csc\theta = \frac{1}{sin\theta}$, where $\sin\theta \neq 0$	$\tan\theta = \frac{sin\theta}{cos\theta}$, where $\cos\theta \neq 0$	$\sin^2\theta + \cos^2\theta = 1$
$\sec\theta = \frac{1}{cos\theta}$, where $\cos\theta \neq 0$	$\cot\theta = \frac{cos\theta}{sin\theta}$, where $\sin\theta \neq 0$	$1 + \tan^2\theta = \sec^2\theta$
$\cot\theta = \frac{1}{tan\theta}$, where $\tan\theta \neq 0$		$1 + \cot^2\theta = \csc^2\theta$