Algebra II Reference Sheet (NGLS)

Quadratic Formula	$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Trigonometric Identities	$\sin^2(\theta) + \cos^2(\theta) = 1$ $\tan(\theta) = \dfrac{\sin(\theta)}{\cos(\theta)} \quad \cot(\theta) = \dfrac{\cos(\theta)}{\sin(\theta)}$ $\csc(\theta) = \dfrac{1}{\sin(\theta)} \quad \sec(\theta) = \dfrac{1}{\cos(\theta)}$
Cubic Factorizations	$a^3 + b^3 = (a+b)(a^2 - ab + b^2)$ $a^3 - b^3 = (a-b)(a^2 + ab + b^2)$
Probability	$P(A \cup B) = P(A) + P(B) - P(A \cap B)$ $P(A \mid B) = \dfrac{P(A \cap B)}{P(B)}$
Independence	$P(A \cap B) = P(A) \bullet P(B)$ $P(A \mid B) = P(A)$

Arithmetic Sequence	$a_n = a_1 + d(n-1)$
Arithmetic Series	$S_n = \dfrac{n(a_1 + a_n)}{2}$
Geometric Sequence	$a_n = a_1 r^{n-1}$
Geometric Series	$S_n = \dfrac{a_1(1 - r^n)}{1 - r}, r \neq 1$ $S_n = \sum_{k=1}^{n} a_1 r^{k-1}, r \neq 1$
Exponential Growth and Decay	$A = P\left(1 + \dfrac{r}{n}\right)^{nt}$ $A = Pe^{rt}$ $A = A_0\left(\dfrac{1}{2}\right)^{\frac{t}{h}}$