## CSE 332: Data Structures and Parallelism

## Summations

Gauss' Summation
$\sum_{i=0}^{n} i=\frac{n(n+1)}{2}$.
Infinite Geometric Series
$\sum_{i=0}^{\infty} x^{i}=\frac{1}{1-x}$.
Finite Geometric Series
$\sum_{i=0}^{n} x^{i}=\frac{1-x^{n+1}}{1-x}$.

A few more useful formulas, more can be found on the slides from lecture 2
logs

$$
\begin{gathered}
x^{\log _{x} n}=n \\
a^{\log _{x} n}=n^{\log _{x} a}
\end{gathered}
$$

