

1. Infinite series

- a. Geometric progression (a, ar, ar^2, ar^3, \dots). When r is greater than 1, sum of the terms in the series never converge to a number. Grows to $+\infty$, if a is greater than 0.
Grows to $-\infty$, if a is lesser than 0.
- b. Geometric progression (a, ar, ar^2, ar^3, \dots). When r is lesser than 1, sum of the terms in the series converge to a number $a / (1 - r)$
- c. $1 + x / 1! + x^2 / 2! + x^3 / 3! + \dots + x^n / n! = e^x$
- d. $1 + x + x^2 + x^3 + \dots + x^n = 1 / (1 - x)$, where $|x| < 1$
- e. $1 - x + x^2 - x^3 - \dots + x^n = 1 / (1 + x)$, where $|x| < 1$
- f.