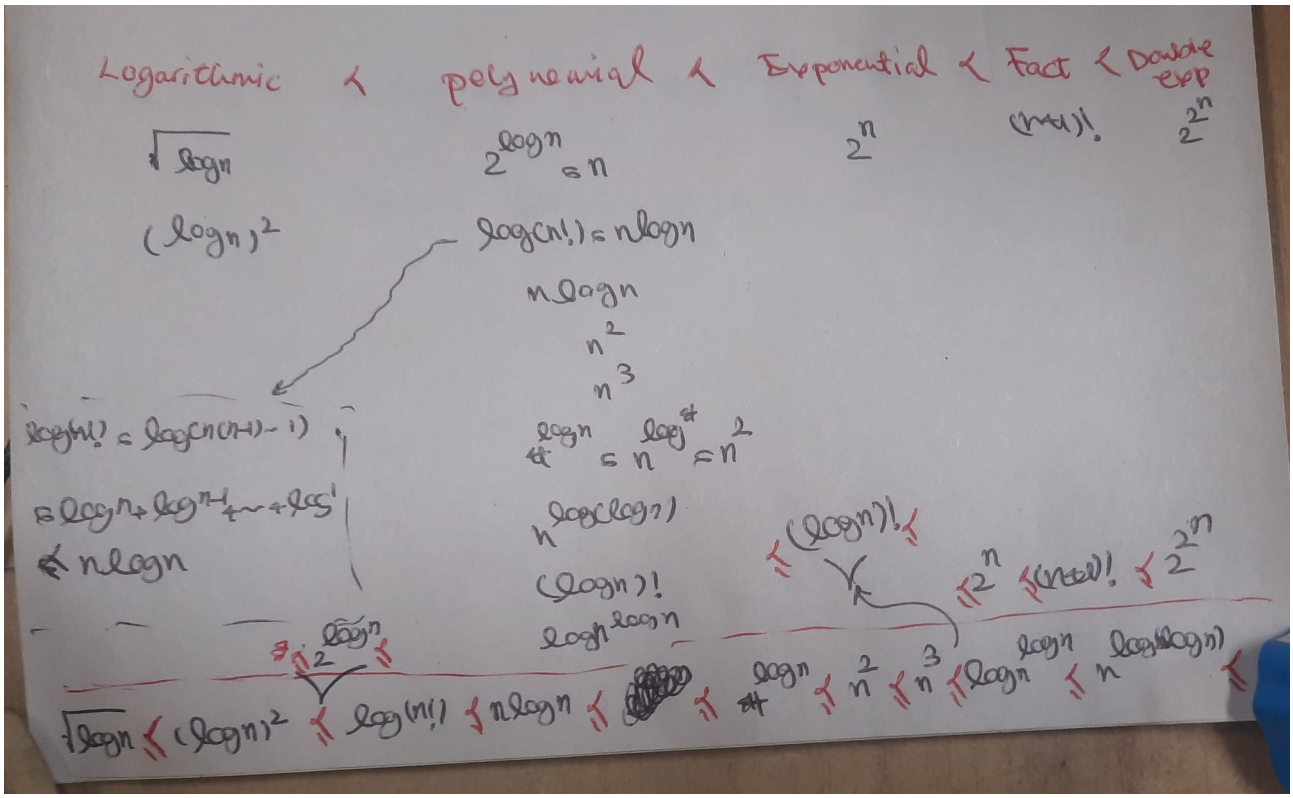
Logarithmic < polynomial < Exponential < Fact < Double exp
$\sqrt{\log n}$
$(\log n)^2$
$2^{\log n} = n$
$\log(n!) = n\log n$
$n\log n$
n^2
n^3
$\log(n!) = \log(n(n-1)\ldots)$
$= \log n + \log(n-1) + \ldots + \log 1$
$\leq n\log n$
$n^{\log n} = n^{\log^* n} = n^2$
$n^{\log\log n}$
$(\log n)!$
$\log^{\log n} n$
2^n
$(n+a)!$
2^{2^n}
$\sqrt{\log n} < (\log n)^2 < \log(n!) < n\log n < n^{\log n} < n^2 < n^3 < \log^{\log n} n < n^{\log\log n}$