

# Comparing Functions

CS 758/858

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1. Exponential functions grow faster than polynomial ones, which grow faster than polylogarithmic ones.
2. Asymptotically, the base of a logarithm doesn't matter.
3. The base of an exponential does matter.
4. The degree of a polynomial does matter.
5. Try taking the  $lg$  of both sides, or raising both sides to a power.
6. Use Stirling's approximation to remove factorials.