Asymptotic Formulæ

$f(n) = \mathrm{o}(g(n))$

formal meaning $f(n) = \mathrm{O}(g(n))$ but not $f(n) = \Omega(g(n))$

calculus

semi-formally

loosely

$f(n) = \mathrm{O}(g(n))$

formal meaning $\exists c, n_0 \; s.t. \;\; \forall n \geq n_0 \quad f(n) \leq cg(n)$

calculus $\lim_{n \to \infty} \frac{f(n)}{g(n)} < \infty$

semi-formally

loosely

$f(n) = \Omega(g(n))$

formal meaning

calculus

semi-formally is eventually greater than (up to a constant)

loosely is eventually greater than (up to a constant)

$f(n) = \Theta(g(n))$

formal meaning

calculus

semi-formally

loosely

Use of Greek notation

- In looking at formulæ using o(), O(), $\Omega()$, and $\Theta()$, we need to remember that o, O, Ω, and Θ, are not _____ .
- The Greek letter symbols o, O, Ω, and Θ, and the concepts of best-case, worst-case, and average-case time

- The Greek letter symbols typically apply to functions whose domain is _____ and whose co-domain is _____ .
- The difference between complexity theory and algorithm analysis is