

Part B

Metarecursion

Metarecursion theory lifts classical recursion theory (CRT) from the natural numbers to the recursive ordinals via definitions in hyperarithmic terms. It makes precise the vague idea that Π_1^1 -ness is analogous to recursive enumerability. As a generalization of classical recursion theory, it is strong enough to carry out the solution of Post's problem and the construction of a maximal set. Thus priority arguments make sense in the context of Π_1^1 sets, and supply results not obtainable by more direct means. As an outgrowth of hyperarithmic theory, it provides a concrete introduction to the fundamentals of α -recursion beyond ω .