0, and in this case, $g(x) = 0$, again by the definition of B. Thus, for every $x \in A$, $g(x) = f(x, z)$. Hence every function $g : A \to \{0,1\}$ is representable by f. By CLT, every function $\phi : \{0,1\} \to \{0,1\}$ has a fixed point. However, the negation function $\neg : \{0,1\} \to \{0,1\}$ defined by $\neg(0) = 1, \neg(1) = 0$ has no fixed point. Therefore, $card\ A \neq card\ 2^A$. □

In the following section we prove some more results by using CLT/CDT.

5. Some More Consequences

You have rightly thought that CLT (or CDT) is not just a generalization of Cantor's Theorem; it is a generalization of the proof of Cantor's Theorem. It encapsulates the spirit of Cantor's diagonalization argument employed in the proof of Cantor's Theorem as discussed in Section 2. Thus it should be possible to derive all the results wherever the diagonalization process is used. In this section we derive some such results as corollaries to CDT and mention some more in Section 6.

The intended results are from mathematical logic. It will be helpful to go through an earlier article [1], though not absolutely necessary, to understand the technicalities. We will denote by F_1, the set of all first order formulas having one free variable, up to equivalence. F_1 consists of all formulas of the type $P(x), \forall y Q(x,y), \forall x Q(x,y)$, $\exists y Q(x,y)$, $\forall x \exists y(\neg P(x) \wedge Q(y,z))$, etc, having exactly one unquantified variable. Since F_1 is taken up to equivalence, two formulas in F_1 are equal iff they are equivalent as first order formulas. Similarly, F_0 denotes the set of all formulas having no free variables, i.e., all statements, up to equivalence.

We also require the mechanism of Gödel numbering. This scheme assigns a unique natural number to each first order formula in a constructive way. Given a formula P, its Gödel number $\ulcorner P \urcorner$ is a unique natural