

BUT I DO NOT UNDERSTAND THE SYNTAX OF YOUR LANGUAGE!!

SYNTAX ERROR!



It seems that you do not understand these mathematical constructs. Let me describe the proof in pseudocode then.



Alright here goes...

suppose you have a program $f(p, i)$ that takes another program p and set of input(s) i .



such that

$f(p, i)$ returns 1 if the program halts and 0 otherwise.

suppose we have the partial function* $g(p)$ that returns 0 if $f(p, p) == 0$ and executes an infinite loop otherwise...

i.e.

```
procedure compute_g(i)
  if  $f(i, i) == 0$  then
    return 0
  else
    while (i)
      pass.
```



NOTICE THAT

g is partially computable



$\exists e$ such that e is a program that computes the partial function g (i.e. $e == \text{compute } g$)