## Computability Assignment Year 2012/13 - Number 1

Please keep this file anonymous: do not write your name inside this file. More information about assignments at http://disi.unitn.it/~zunino/teaching/computability/assignments

## 1 Question

Define a binary property p(x, y) over natural numbers such that we have both

- 1.  $\forall x \in \mathbb{N} : \exists y \in \mathbb{N} : p(x, y)$
- 2.  $\neg \exists y \in \mathbb{N}. \forall x \in \mathbb{N}. p(x, y)$

Provide a definition for p, and a proof for the above claims.

## 1.1 Answer

This is a test submission. This is a test submission. This is a test note. — RZ This is a test submission. Random formula:

$$f(n) = \# \left( \lambda x. \begin{cases} 1+x & \text{if } x \text{ is even} \\ 3 \cdot x + 1 & \text{otherwise} \end{cases} \right)$$

This is a test submission. This is a test submission. This is another test note. Blah f(x) = 5 blah.— RZ This is a test submission.