1035-Q1-1722      **Ruggero Ferro\*** (`ferro@sci.univr.it`), via Gabelli 57, 35121 Padova, Italy. *Remarks about the notion of EXISTENCE in mathematics.*

There are different situations in which we use the word "exist" and the meaning meant in each one may not be exactly the same.

Here is a list of sentences in which the word "exist" occurs. I exist. The pain that I feel exists. This pen exists. Kangaroos exist. Different objects exist. The reality exists. The parenthood relation among humans exists. The order relation among natural numbers exists. A certain relation exists. An event exist. A procedure exists. A project exists. A model exists. A need exists. An opportunity exists.

What is the relationship between "it exists" and "there is"? Examples of uses of there is: there is in my fantasy; there is in my hopes; there is among my projects; there is in my dreams.

Examples of existence in mathematics: existence of a specific number system; existence of a single number; existence of a solution (and the solution may be either a way of behaving or an object with adequate properties).

The presence of all these different situations requires a closer attention to what is meant by it exists.

In my presentation, I plan to make same remarks and comments on the above hinted difficulties. (Received September 20, 2007)