

Using TI-Nspire in a Modelling Teacher's Training Course

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Abstract

Using Mathematical Modelling has become a useful tool in teaching-learning mathematics at all levels. This is so because mathematical objects are seen from their very applications, giving them meaning from the beginning.

In this lecture we present some details on the development of a teacher's training course called *Modelling in the Teaching of Mathematics* for high school teachers in Mexico City metropolitan area. In that course we used TI-Nspire CX CAS calculators as a tool to pose and solve modelling problems in the context of the teaching model Learning Mathematics, Doing Mathematics.

We are interested in highlight four aspects of the sessions:

- a) The kind of problems we can have in modelling as teaching-learning methodology.
- b) The use of calculators as facilitator tools in solving the problems.
- c) Teachers' attitudes and beliefs towards the use of this kind of technology in teaching high school students.
- d) Teachers' perceptions of the course and its usefulness in teaching mathematics.

We will illustrate our points looking at some examples of the teachers work during the course.

In particular, it is interesting to see some solving strategies of the following problem:

A goat is tied up at the corner of a rectangular cottage (3 x 5 meters) in the middle of a huge grass field. What's the area the goat can cover if the length of the rope is 4 meters? What's the length of the rope if the goat can cover a 50 squared meters area?

Find a mathematical model that describes the area covered in terms of the rope's length. Explain in full detail your model.

Keywords

Mathematical Modelling, Teachers Training, CAS Calculators, Teachers Attitudes and Beliefs.