USING A CALCULATOR TO INVESTIGATE WHETHER A LINEAR, QUADRATIC OR EXPONENTIAL FUNCTION BEST FITS A SET OF BIVARIATE NUMERICAL DATA

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TARGET AUDIENCE: FET Mathematics teachers

DURATION: 2-hours workshop

MAXIMUM NUMBER OF PARTICIPANTS: 30

MOTIVATION:

The Overview of Topics in the GRADE 12 CAPS states:

Represent bivariate numerical data as a scatter plot and suggest intuitively and by simple investigation whether a linear, quadratic or exponential function would best fit the data.

The Casio fx-82ZA PLUS calculator can be used to determine the best function to fit the data.

CONTENT OF THE WORKSHOP:

STEP 1: Revise how to use the Casio fx-82ZA PLUS to determine the linear regression function.

STEP 2: Example 1 – draw a scatter plot and then use the calculator to determine both the linear and exponential regression functions; draw and compare the two regression functions.

STEP 3: Example 2 – draw a scatter plot and then use the calculator to determine both the linear and quadratic regression functions; draw and compare the two regression functions.

STEP 4: Summary of findings and closure.

ABSTRACT:

Grade 12 mathematics learners need to be able to determine whether a linear, quadratic or exponential regression function best fits a set of bivariate data. The learners find this task very easy once they have been shown how to do this on a scientific calculator. In this workshop we will plot two different sets of bivariate data and then use the calculator to determine the regression function that best fits each set of data.

REFERENCE:

Classroom Mathematics Grade 12 (2013)