UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
SUPPLEMENTARY EXAMINATION PAPER 2013/2014

TITLE OF PAPER: CURRICULUM STUDIES IN MATHEMATICS

COURSE CODE: EDC 281

PROGRAMME: B.ED 2 & PGCE

TIME ALLOWED: THREE (3) HOURS

TOTAL MARKS: 100

INSTRUCTIONS: ANSWER ANY **FOUR** QUESTIONS. EACH QUESTION IS WORTH 25 MARKS.

PROVISION: SGCSE Syllabus

THIS PAPER CONTAINS 3 PAGES. DO NOT OPEN UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

Question 1

(a) State and explain each of the **two** views fundamental to RME. [5]
(b) With the help of examples explain horizontal and vertical mathematization [5]
(c) State and describe each of the **five** basic characteristics of RME [15]

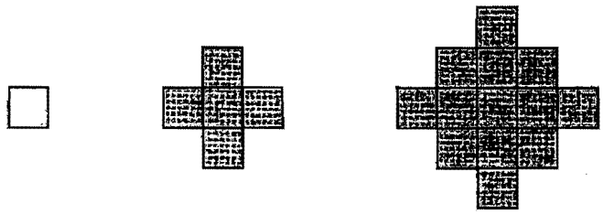
Question2

You are to help learners develop the formula for area of the curved part of a cylinder.

(a) What would you use as concrete material(s) for this lesson? [2]
(b) Give a detailed explanation of how you would use the material in (a) to help learners develop the formula. DO NOT PREPARE A LESSON PLAN [15]
(c) How do you expect them to use what they learnt in this lesson when given a novel question (such as calculating the area of the inside wall of a rondavel)? [8]

Question 3

(a) Define
  i) an investigation [2]
  ii) problem solving [2]
(b) Write **three** benefits of problem solving to the learning of mathematics in each case stating **two** points that support the benefit [9]
(c) Look at the series of diagrams.



1 2 3

Each time new squares are added all around the outside of the previous diagram. Draw the next few diagrams in the series and count the number of squares in each one. [3]

(d) How many squares are there
  i) in diagram number 15 [3]
  ii) in diagram number 50? [3]
(e) Use the method you used to answer (d) to write an expression for the number of squares in diagram n. [3]

Question 4

Your class has learnt trigonometric ratios for right angled triangles. Design an activity you would use to lead learners to learn through investigation that area of a triangle

ABC is $\frac{1}{2}$ abSinC or $\frac{1}{2}$ acSinB or $\frac{1}{2}$ cbSinA where a, b and c are sides opposite to angles A, B and C respectively. [25]

Question 5

Write an essay on the importance of learning theories in the learning of in school mathematics. [25]