UNIVERSITY OF SWAZILAND
FACULTY OF EDUCATION
MAIN EXAMINATION PAPER 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

EXTRA MATERIAL CONTENT: SGCSE MATHEMATICS SYLLABUS

GRID PAPER/SQUARED PAPER

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

This paper contains 3 pages including this one

Question 1

(a) State **five** of the criteria for scoring an "A" grade in SGCSE mathematics. [5]

(b) Choose **one** learning method from the learning methods studied in this course and explain why you would support its use in the teaching and learning of school mathematics. [15]

(c) State **five** reasons for scheming. [5]

Question2

(a) How does a problem differ from an exercise? [2]

(b) Critically analyse Senzo's solution to the mathematics problem at the beginning of appendix 1 [8]

(c) Write in detail on any **one** learning theory studied in this course. Expound on the importance of this theory in your teaching of school mathematics. [15]

Question 3

Create a group discussion learning task on the topic "Enlargement" for senior secondary learners [10]

(a) Identifying the following for the task:

i) Material(s) needed to do the task [2]

ii) Prerequisite knowledge [5]

(b) The expected learning outcomes at the end of the task [8]

Question 4

For mathematics to be meaningful to learners it should be taught in contexts that are realistic to them. Using the syllabus subtopics 'Ratio and Proportion' explain how it could be treated using realistic contexts. [25]

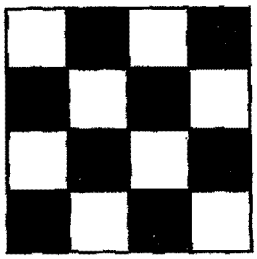
Question 5

Write an essay on the importance of the affective domain in the learning and teaching of school mathematics. [25]

Appendix 1

12 Chess board

Start with a small board, just 4 × 4.



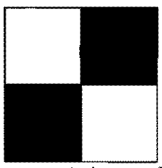
How many squares are there? [It is not just 16!]

How many squares are there on an 8 × 8 chess board?

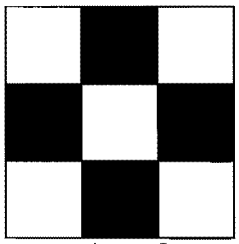
How many squares are there on an $n \times n$ chess board?

Senzo's Solution

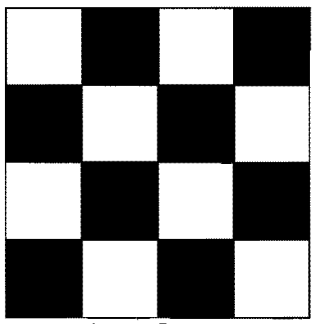
Number of squares 1



Number of squares 5



Number of squares 10



Number of squares 17

On an 8 by 8 board there are 65 squares. The rule for an n by n square is $n^2 + 1$