



Province of the
EASTERN CAPE
 EDUCATION

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CHIEF MARKER'S REPORT

INSTRUCTIONS

1. The Chief Markers are required to complete this report during the marking session. The aim of the report is to provide a feed back and to help subject advisors and educators to improve teaching and learning.
2. The report should be informed by discussions between the **Chief Marker, moderator, senior markers and markers** of the particular subject. **NB: There should be one report per subject per paper.**
3. The report must be detailed, informative and indicate question by question performance of the candidates and mark distribution of centres.
4. Reference may be made to the topics identified below as well as any aspect the Examiner wishes to bring to the attention of the subject advisors and educators.
5. **The report must be submitted in hard copy and an electronic version to the centre manager at the marking centre.**
6. All markers reports must be handed in with the hard copy.
7. The electronic report should be emailed to varkchan.joseph@edu.ecprov.gov.za
6. The centre managers then forward the reports to the Directorate of Assessment and Examination (Att: Mr. V A Joseph) in King William's Town.

SUBJECT:	MATHEMATICS
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GRADE:	12	PAPER:	1
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DATE OF EXAMINATION:	NOV 2009	DURATION:	3 HRS
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1. ANALYSIS OF QUESTION BY QUESTION PERFORMANCE OF THE CANDIDATES

Give a detailed account of how the candidates performed in each question. In doing this, the following steps should be followed:

- 1.1 The aim/objective for setting the question (what skills, knowledge, values and attitudes were being tested by asking the question)
- 1.2 Relevance or relation of the question to the Los and Ass.
How did the candidates perform in the question?
- 1.3 Where did candidates lack expertise or fail in giving an appropriate answer to score high marks in the question?

QUESTION 1

- 1.1.1 Answered by most of the candidates. Tested the solution of simple quadratic equations.
- 1.1.2 Use of the formula was indeed a challenge for some learners. They need thorough practice to solve the quadratic equations using this method.
- 1.1.3 Very poorly answered. Basic understanding of inequalities is lacking and majority of the learners were not familiar with the solution of quadratic inequalities.
- 1.2 Although simultaneous equations are popular and easy to solve, many candidates could not score good marks in this question. They struggled to simplify and factorise.
- 1.3 This question proved to be a higher order and only few learners could solve it. The question tested the manipulation of indices and simplification.
- 1.4 The question tested the ability to manipulate and simplify surds and algebraic expressions. Majority could not simplify.

Almost all candidates answered this question. However sections 1.1.3, 1.3 and 1.4 were a bit challenging for the candidates. Solution of inequalities was not answered correctly by majority of learners and 1.3 and 1.4 were of higher order questions. Only above average learners could solve these questions.

QUESTION 2

- 2.1 Tested the knowledge and skills to identify arithmetic and geometric sequences. Candidates were required to find the general term, which is a routine question. Majority managed to get the general term.
 - 2.2 The question was a non-routine and even those candidates with very good Mathematical background could not answer the question.
- Educators are urged to expose our learners to questions that can promote critical thinking skills.

QUESTION 3.

The question was intended to test the use of sigma notation and to find the sum of the series. Although routine in nature, many candidates failed to get correct solutions due to the poor understanding of the Σ notation and application of the formula for the sum.

Educators are urged to drill the learners and make sure that learners can answer questions of the given nature.

QUESTION 4

The question was answered by most of the candidates. However, 4.4 was indeed challenging for majority as it was of higher order. Learners lack analytical skills to answer such questions and it was compounded by the complexity of the language used in the question.

QUESTION 5

This question was poorly answered. It seems that the candidates could not comprehend the question well and coupled with the poor analytical skills they struggled to translate the question in to the mathematical model. Problem solving is an integral part of the curriculum and it must be treated as such by educators and learners.

QUESTION 6

Question 6 tested the ability of the candidates to manipulate algebraic fractions and solution of equations to get the point of intersection. Although 6.1 was attempted by majority of candidates 6.2, 6.3 and 6.4 were not answered by a good percentage of candidates. It seems that the concept of symmetry and inverse are all strange to some candidates as they struggled to answer the question. Majority of Educators tend to neglect the topics that fell outside the former S.G curriculum and this contributed to the poor performance of the candidates. Also, poor algebraic manipulative skills of the learners was evident in the answers of this question.

QUESTION 7

This question was to test the skills of the learner to read the values off the graphs. Candidates must be exposed to these type of questions and they need to understand the functional notations fully, to tackle questions of this nature. Probably, many educators did not focus on this type of questions and that led to the poor response of the candidates.

QUESTION 8

8.1, 8.2 and 8.3 are knowledge based questions. From the responses of the candidates we can identify the dire need for the retraining of our former SG educators, who could not cope with the additional topics in the new curriculum. 8.4 and 8.5 are of higher order that need abstract thinking and very few learners could give correct responses. **Where available, technology could be used to enhance the understanding of the concept.**

QUESTION 9

Although it is a routine problem, the present value and future value formulae are new to most of the educators. The question was made much more complex by the language used ,especially for those learners with English as a second language. Educators need to accept the fact that **'every teacher is a language teacher'** and the **Language of Teaching and Learning (LOLT) must be observed** . More drilling is needed on financial mathematics.

QUESTION 10

Question was answered by almost all candidates. However ,the use of correct notation is still a challenge to many and educators need to see that learners are familiar with correct notation and sensitise the learner on this issue, that they lose marks if the correct notations are not used.

QUESTION 11

Most of the candidates could carry out the routine procedures to sketch the graph of a cubic function. However, a good percentage of learners could not cope with the factorisation and the subsequent steps leading to the sketching of the graph. Use of calculators to determine the turning points appeared to be a challenge to many. Educators need to spend more time on this type of questions and assist learners on the use of calculators.

11.5 needs more attention from the side of educators, as many learners could not really cope with the question.

QUESTION 12

A question that was answered by very few, as it was on the problem solving level. 12.3 Learners could not interpret /explain the rate of change of height above sea level.

It seems that the application of first and second derivatives in problem solving contexts were not taken seriously by many educators, or they lack knowledge and necessary skills to handle such problems. Intervention by the Department is crucial in this respect, to upgrade the educators on the relevant content.

QUESTION 13

The question was attempted by most of the candidates. To determine the constraints from the graphs was unfamiliar to many candidates. That itself made the question a bit challenging. Educators can use suitable methods to make sure that learners are in a position to determine the constraints and solve the problem.

13.4 was of higher order and very few candidates answered it.

Linear programming is indeed a new topic for the former **SG Educators** and training of educators in the content is a matter of urgency.

7. ANY ADVICE THAT YOU COULD GIVE TO EDUCATORS TO HELP LEARNERS TO REACH THE EXPECTED LEVELS.

1. Educators need to upgrade their knowledge and skills to meet the challenges of the new curriculum.
2. Learning clusters and regular cluster meetings in the Districts can assist educators in their professional development and boost their confidence in dealing with the subject.
3. Be members of professional bodies like AMESA and get developed with their assistance.
4. Motivate learners to study Mathematics and assist them in achieving the best. Expose learners to careers that are Science, Engineering and Technology based and assist them in obtaining bursaries at tertiary institutions. Contact MSTE co-ordinator in your District Office, for more information and assistance.
5. Encourage learners to participate in Quiz, Olympiads and other activities, to generate interest in the learning of Mathematics.
6. If available, try and use technology in the teaching and learning of Mathematics, as it generates interest in the learner. Contact e-learning specialist in the District office for assistance.
7. Please remember the fact that there is no substitute for teaching and hence only **good teaching coupled with relevant assessment practices** can assist the learner to reach his/her expected levels.

8. ANY OTHER COMMENTS

1. The content knowledge of majority of our educators is not really compatible with NCS and they need to upgrade knowledge and skills.
2. Department, as a matter of urgency, identify the content gap of our Educators and organise training for them.
3. Many markers struggled to make sense of learner's responses due to lack of adequate teaching experience/ knowledge/skills, in the subject.
4. Learners really struggled to translate problems in to Mathematical Model (Mathematical Modelling) and it contributed to poor performance in the Examination.
5. Appoint well qualified Mathematics teachers and retain them by offering performance related incentives.
6. Mathematics teaching should be intensified from Foundation Phase and Educators to go through in-service training to prepare our learners for 21st century.
7. Finally, we can win this battle, if the educators and the Department work together, in the interest of the learner, and commit and dedicate ourselves to teach the subject and prepare learners for future.

SIGNATURE OF EXAMINER/MODERATOR: _____



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