



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 10

MATHEMATICS P3

EXEMPLAR PAPER

MARKS: 50

TIME: 1 hour

This question paper consists of 5 pages and an information sheet.

153 3 E

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions:

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Clearly show ALL calculations, diagrams, graphs, et cetera you have used in determining the answers.
3. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
4. If necessary, answers should be rounded off to TWO decimal places, unless stated otherwise.
5. Number the answers EXACTLY as the questions are numbered.
6. Diagrams are NOT necessarily drawn to scale.
7. It is in your own interest to write legibly and to present the work neatly.

QUESTION 1

Estimate the probability for each event given below. State if the probability is *below average*, a *50-50 chance*, *above average*, *certain*, *impossible* or *if you cannot tell with the given information*:

Event A: The next baby to be born will be a boy. (2)

Event B: A triangle will have three sides. (2)

Event C: Bafana-Bafana will win the 2010 World Cup Soccer. (2)

Event D: A frog will become the next captain of the football team. (2)

[8]

QUESTION 2

There are 130 Grade 10 learners in a school. Sixty-eight learners take Mathematics and 50 learners take Physical Science. Thirty-two learners take Mathematics and Physical Science.

2.1 Draw a Venn diagram to illustrate the given data. (4)

2.2 Hence calculate the probability that a learner in Grade 10, chosen at random:

2.2.1 Takes Physical Science (2)

2.2.2 Takes Mathematics but not Physical Science (2)

2.2.3 Takes Mathematics or Physical Science (4)

[12]

QUESTION 3

Mrs James has a CD player to give to one of the learners in her class who participated in a competition. Here are the names of the learners and their ages who participated in the competition:

Boys	Age
Nathan	15
Manie	16
Jonathan	15
Mutumi	15
John	15
David	17
Rafiek	16

Girls	Ages
Delia	17
Francina	17
Nomsa	16
Gracie	15
Petro	16
Violet	17
Morwesi	16
Charlise	15

3.1 Give $n(S)$. (1)

3.2 Events are defined as follows:

- E_1 : A boy is selected
- E_2 : A 16-year-old must win
- E_3 : The winner's name starts with an M
- E_4 : A 17-year-old must win

3.2.1 Determine $P(E_1)$. (1)

3.2.2 Determine $P(E_4)$. (1)

3.2.3 Determine $P(E_2)$. (1)

3.2.4 Determine $P(E_4)$ (1)

3.2.5 Determine $P(E_1 \text{ or } E_4)$. (3)

4.2.6 Determine $P(E_2 \text{ and } E_3)$. (3)

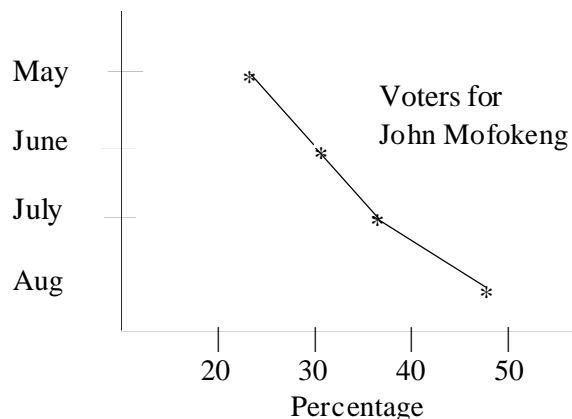
[11]

QUESTION 4

During a local municipality election, the following graph was published in a flyer of one of the participating parties. It shows the results of a voter preference poll of the opposite candidate, John Mofokeng.

Percentage of voters choosing John Mofokeng

May	June	July	Aug
24	30	38	49



- 4.1 According to the table, is John Mofokeng gaining or losing popularity? How do you know? (2)
 - 4.2 What impression is given by the graph? How has this impression been created? (2)
 - 4.3 Do you think that the impression created in the graph is intentional? Explain. (3)
 - 4.4 Draw a graph which gives the reader a fair impression of the data. (3)
- [10]**

QUESTION 5

Three students made the following conjectures in Mr Morgan's class. If the conjecture is TRUE, give an argument or proof in support. If the conjecture or statement is FALSE, give a counter-example or proof to disprove the conjecture or statement.

- 5.1 Morwesi stated that if the three sides of a triangle are equal, then all the angles are equal. (3)
 - 5.2 John said that if one pair of opposite sides of a quadrilateral is equal, then the quadrilateral is a parallelogram. (3)
 - 5.3 Mary stated that the diagonals of all quadrilaterals drawn with corners on a circle, always cross at the centre of a circle. (3)
- [9]**

TOTAL: 50