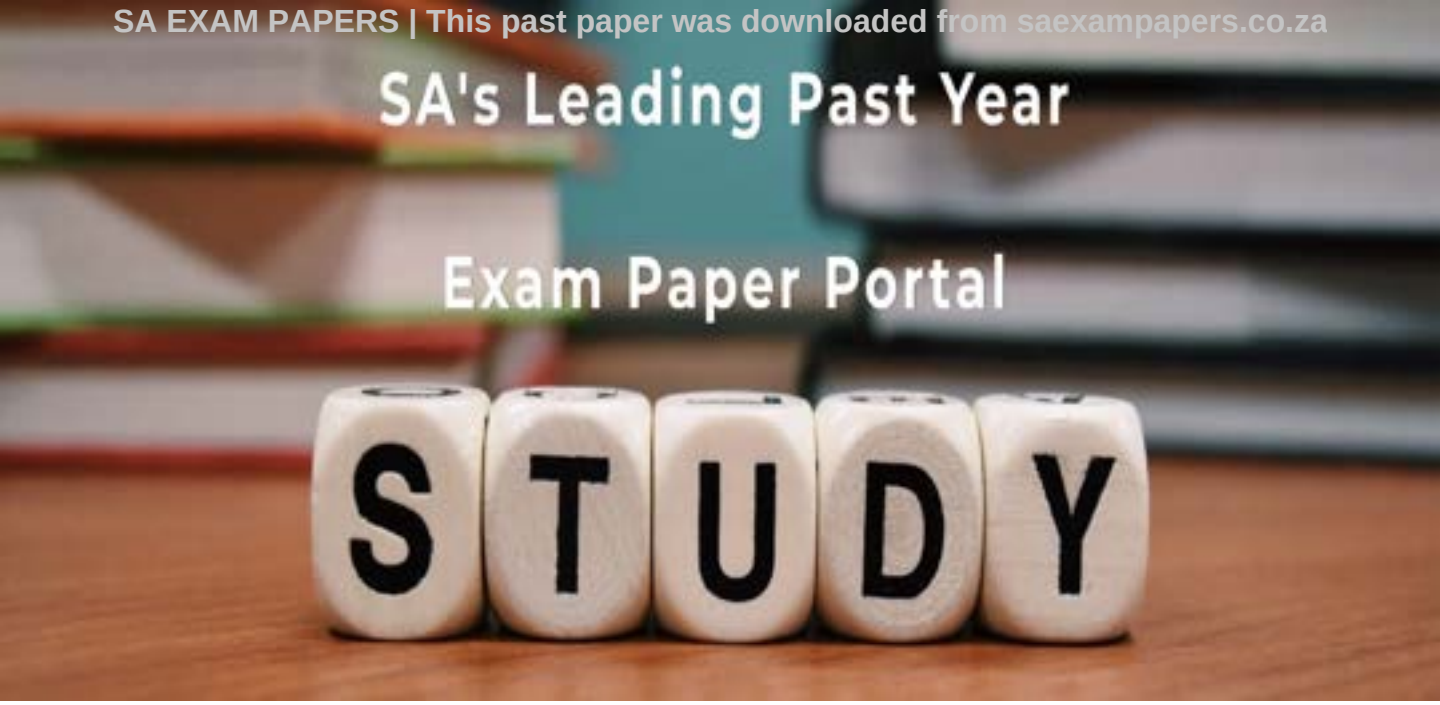

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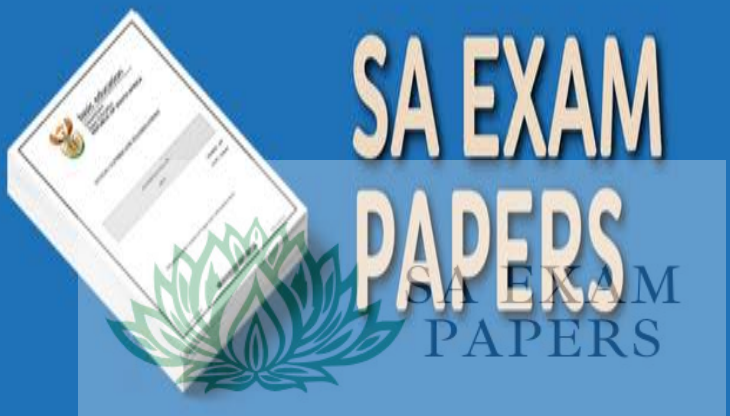


education
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2 (FINAL)

JUNE 2024

MARKS: 100

TIME: 2 hours

This question paper consists of 10 pages.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **FOUR** questions. Answer **ALL** the questions.

2. Use the Annexures in the Addendum for the following questions

   ANNEXURE A for QUESTION 2.1
   ANNEXURE B for QUESTION 2.2
   ANNEXURE C for QUESTION 3

2. Number the answers correctly according to the numbering system used in this question paper.

3. Start EACH question on a NEW page.

4. You may use an approved calculator (non-programmable, non-graphical), unless stated otherwise.

5. Show ALL calculations clearly.

6. Round off ALL final answers appropriately according to the given context, unless stated otherwise.

7. Indicate units of measurement, where applicable.

8. Maps and diagrams may NOT be drawn to scale, unless stated otherwise.

9. Write neatly and legibly.

QUESTION 1

2024 is an election year. The election took place over 3 days, which includes special votes. To give all citizens of South Africa a change to vote, 29 May was declared a public holiday.

1.1 Below are some of the explanations or definitions terms used on social media during this time

A	A symbolic representation of selected characteristics of a place drawn on a flat surface.
B	Something that may or may not happen when an action is performed
C	The likelihood of something happening or not happening
D	This is the result of an event.
E	Determines how many times smaller an object shown on a plan or map is that its actual size
F	A plan or design having length and width only, but possibly representing three dimensional objects
G	A series of trials performed one after another
H	Shows the design and dimensions of the inside of a building, from a top view.
I	A particular place or position

Use the information above to write down the letter of the explanation or definition (A-I) of EACH of the following concepts:

1.1.1 Floorplan (2)

1.1.2 Location (2)

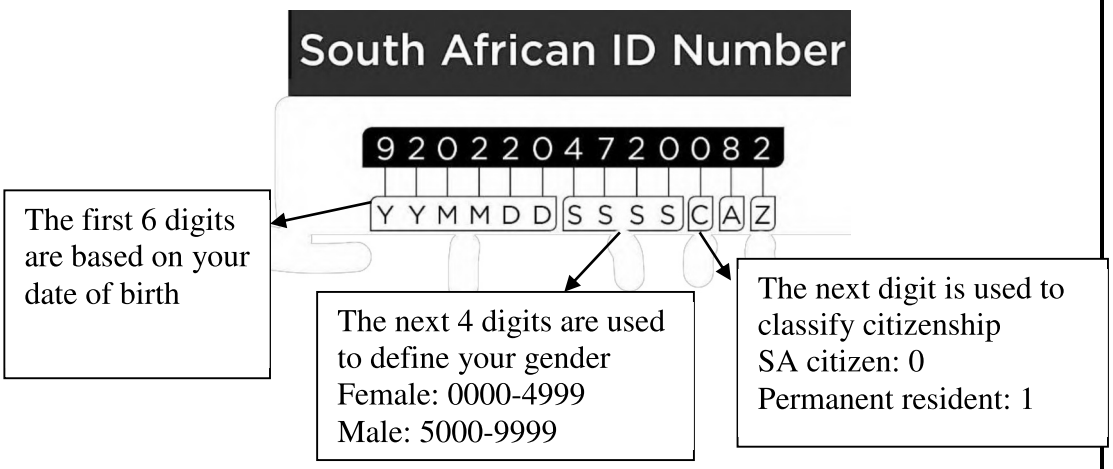
1.1.3 Outcomes (2)

1.1.4 Scale (2)

1.2 To vote in South Africa you need to be a citizen of the country. You will need a valid ID book or ID card. On this ID card is a ID number

Note: ID means Identification Document

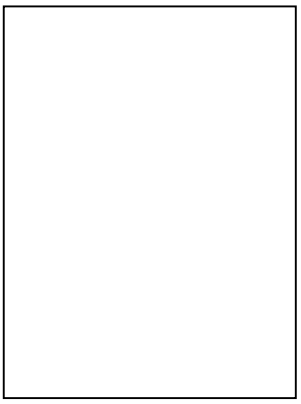
Below explains what the ID number means



1.2.1 Determine how old will the person with the ID number, 840522 4568 082 be when voting on the public holiday. Give your answer in years, months and days (2)

1.2.2 What will the probability be that a register voter chosen randomly will have a 7 for the third last digit? (2)

1.3 The green Identity Document (ID book) is a rectangular book. See picture below



Length = 110 mm

Width = 8 cm

1.3.1 Convert the length of the ID Book to cm. (2)

1.3.2 Determine the width of the ID Book if was opened. (2)

1.3.3 Write the width and the length as a ratio in unit form (1: ….) (2)

1.3.4 Determine the probability of randomly selecting the letter "o" when selecting a letter from the cover of the ID book. Give your answer as a fraction. (2)

[20]

QUESTION 2

2.1 Schools are often used as voting stations. A floor plan of a school is given in Annexure A. Rooms allocated for voting is indicated with the number 5.

Refer to Annexure A and answer the following questions.

2.1.1 What type of scale is used in this floor plan? (2)

2.1.2 Give a reason why they allocated these three rooms for voting. (2)

2.1.3 Determine (in meters) the interior width of room 7. Show all calculations. (4)

2.1.4 A voter enters the building at E1. Using compass directions, give the voter directions to the closest voting room. (5)

2.1.5 Using the given scale, determine an appropriate number scale for the floor plan. Round your answer to the closest whole number. (4)

2.1.6 Why would you prefer to use a scale as on the plan rather than using a number scale? (2)

2.2 In Annexure B there is a map of a small town. Use the given Annexure to answer the following questions.

2.2.1 Give the grid reference where the school is allocated. (2)

2.2.2 Give the four street names that boarder on the park (4)

2.2.3 In which general direction is the school from the town hall? (2)

2.2.4 Give the grid reference/s in which William street will be found. (3)

[30]

QUESTION 3

In the 2024 election there are 70 political parties and 12 independent parties. An Example of the national sample ballot is in Annexure C.

The national ballot form is rectangular with a side length of 38 cm.

There will be 2 column of rows with equal names.

The column height will be 85% of the page length.

The average person will make a cross with two 1cm lines to vote.

Each person will receive three ballots to vote on. This will be for : National, Provincial and Regional

There are 6,81 million registered voters in South Africa.

3.1 Determine the height of each row given in the voting ballot. Give your answer to the nearest mm (5)

3.2. Determine length of ink that a voter will use after completing the voting process. Give your answer in cm (2)

3.3 The Bic pen that is supplied can write 2km before the ink is finished. Determine how many voters can complete the voting process with one pen. (4)

3.4 The IEC had budgeted R3500 for pens in this election. They are buying triple the amount needed to be prepared.

Bic pens are sold in boxes that cost R349 a box. There are 60 pens in a box.

Using your answer in 3.3 determine if the IEC has enough set aside for pens. (8)

3.5 In some parts of South Africa, it is extremely cold in the mornings. Pen ink freezes at 30ºF. Convert this to ºC. Give your answer rounded to the nearest degree.

You may use the formula : $^{\circ}F = \frac{9}{5}\left(^{\circ}C\right) + 32$ (4)

3.6 Schools are often selected as voting stations. One of these schools decided to give a free cup of coffee until 12:00 as a service to the community, since it is cold in the mornings.

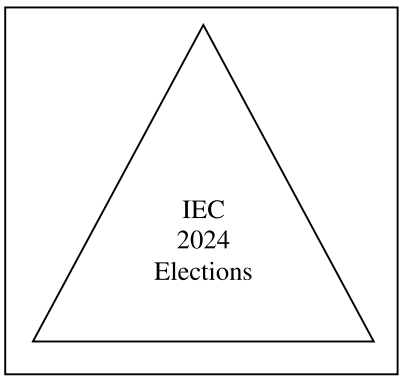
There are 1250 registered voters and they expect halve would vote before 12:00.

The principal states that 160 litres of water will be enough. Verify his statement. Show all calculations.
(Note : 1 cup of coffee will use 200 ml of water.) (4)
[27]

QUESTION 4

Each year the IEC designs a stamp to validate the voting ballot. This year their design is in the form of an equilateral triangle.

The stamp pad's base has a length of 3 cm. The triangle is placed in the center with 3 mm on each side.



Use the information above to answer the question that follow.

4.1 Determine the length of the base of the triangle. (2)

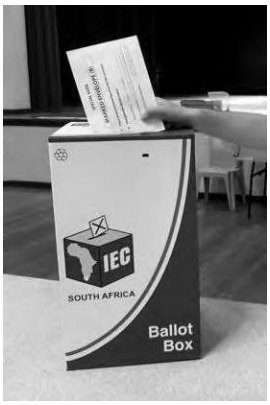
4.2 Determine the perpendicular height of the triangle if the Area is 2,494 cm^2.
You may use the formula : **Area = 0,5 × basis × perpendicular height** (3)

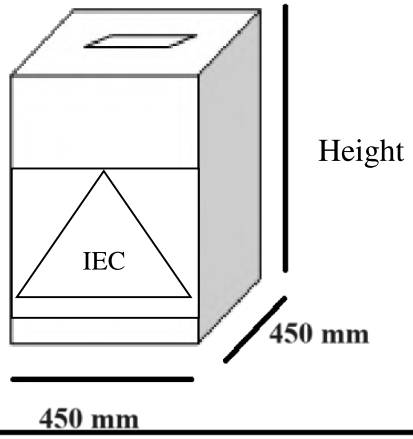
4.3 Calculate the area of the square stamp pad in cm^2.
You may use the formula : **Area = Side × Side** (2)

4.4 Determine the percentage of the stamp pad that does not form part of the IEC stamp. (3)

4.5 The IEC uses the stamp as a scale drawing. They will increase the size to print a sticker which will be placed on the ballot boxes.

The sticker must be the width of the ballot box.





4.5.1 Determine the number scale that was used for the sticker. (3)

4.5.2 An IEC member states that the height of the box is 700 mm as the sticker covers 60% of the ballot box side. Verify the statement by calculating the height. (3)

4.6 A voter and his wife is on holiday in Paris. They are planning to arrive in South Africa the 25th of May in time to vote.

They will be flying an Airbus A350-1000 from Charles de Gaulle in Paris to Abu Dhabi Airport (5 280 km) and then a Boeing 787-9 to OR Tambo international (6 305 km).

The total time from departure until they land in South Africa will be 22 hours and 15 min. There will be a stopover time* of 6 hours and 55 min.

*Stop overtime: This is time that passes between flights. Time that you will wait for the next flight.

4.6.1 Calculate the total time that they will be flying. (2)

4.6.2 Determine the average speed that the plains would fly.

You may use the formula : **Speed × Time = Distance** (5)

[23]

GRAND TOTAL : 100