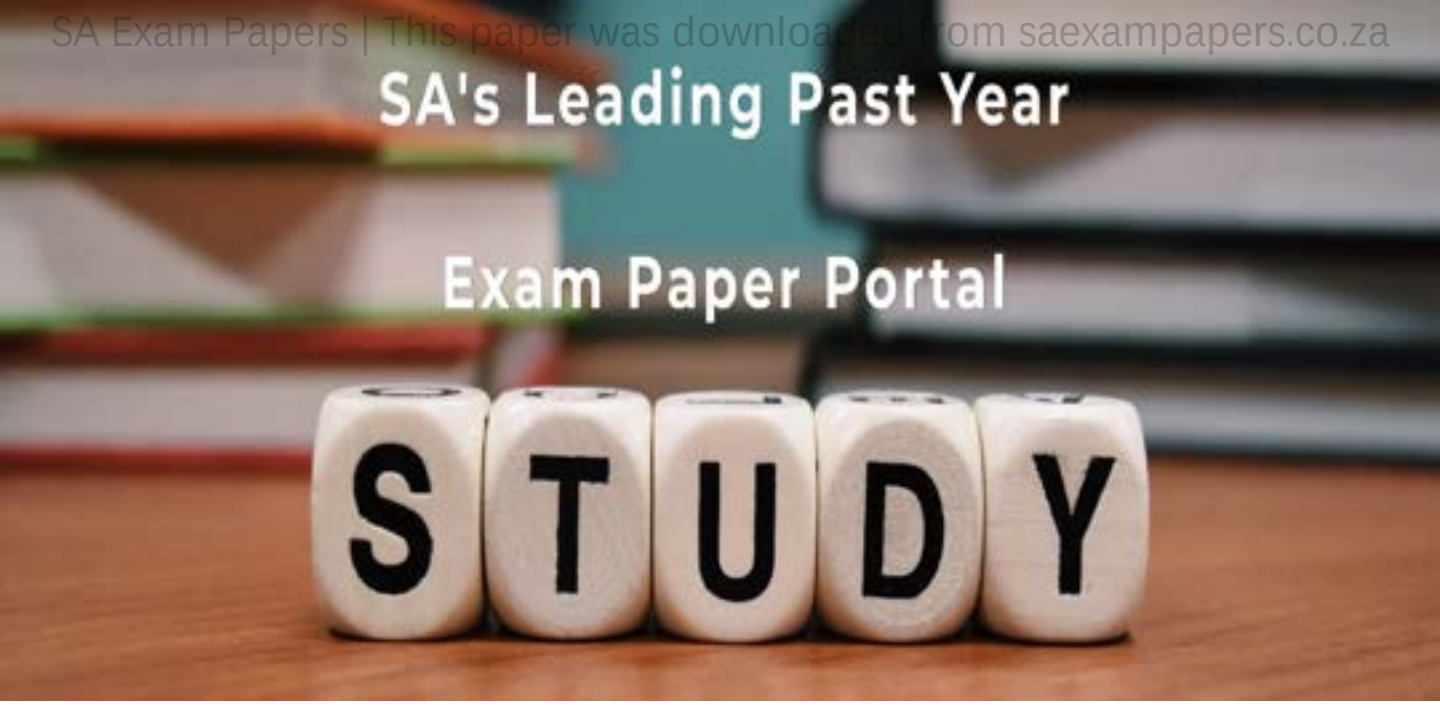


GRADE 12

MATHEMATICAL LITERACY P2

QUESTION PAPER

SEPTEMBER 2023

MARKS: 150

TIME: 3 hours

This memo consists of 12 pages

INSTRUCTIONS AND INFORMATION:

1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Use the ANNEXURES to answer the following questions:
   ANNEXURE A for QUESTION 2.1
   ANNEXURE B for QUESTION 3.1
   ANNEXURE C for QUESTION 4.1
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL the calculations clearly.
7. Round off ALL final answers appropriately to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

QUESTION 1

1.1 The list of ingredients for Butter bean curry with chicken as made by Fatima Sydow is shown below.

Fatima Sydow Cooks
Butter bean curry with chicken

Ingredients

8-10 pieces of chicken (remove skin)
2 cans of butter beans (drained).
2 onions chopped finely.
2-3 tablespoons of roasted masala
2 teaspoons of turmeric
2 teaspoons of paprika
3 whole chillies
1 tablespoon of sugar
1 tablespoon of vinegar
2 bay leaves
2 cardamom pods
Salt to taste
2 tablespoons of vegetable oil for frying onions
1 cup of chopped coriander

NOTE: 1 teaspoon = 5 mℓ

[Adapted from m.facebook.com]

Drained mass:
250 g

[Source:game.co.za]

1.1.1 Calculate in grams, the mass of the butter beans needed for this recipe. (3)

1.1.2 A tablespoon is 3 times the quantity of a teaspoon. Calculate the maximum amount of roasted masala used in mℓ. (3)

1.1.3 According to the instructions this dish should take a maximum of 35 minutes to make.

A client walks into a restaurant and orders the meal at 19:22, determine the time it should be ready. (2)

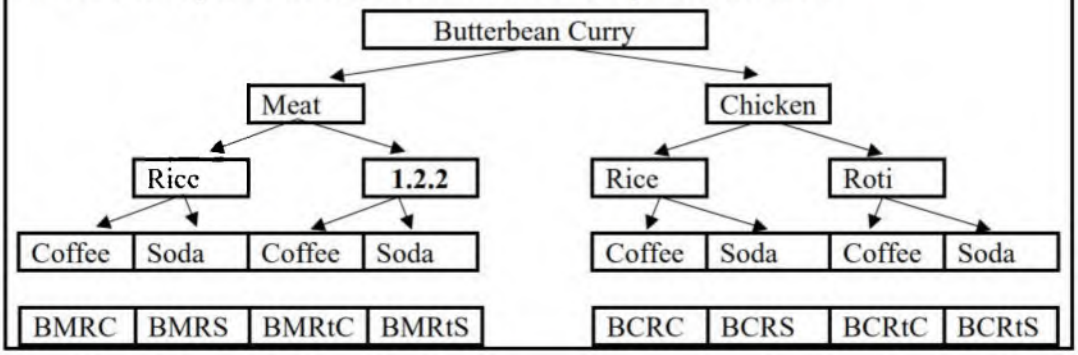
1.1.4 The picture alongside is indicating the temperature of the content of the pot on a food thermometer during the cooking process.

Write down the temperature in °C.

(2)

1.2 Dawn's Flame Lovers Chow is selling the most delicious butterbean curry meals at the restaurant.

The available options are shown below. One of the options is omitted.



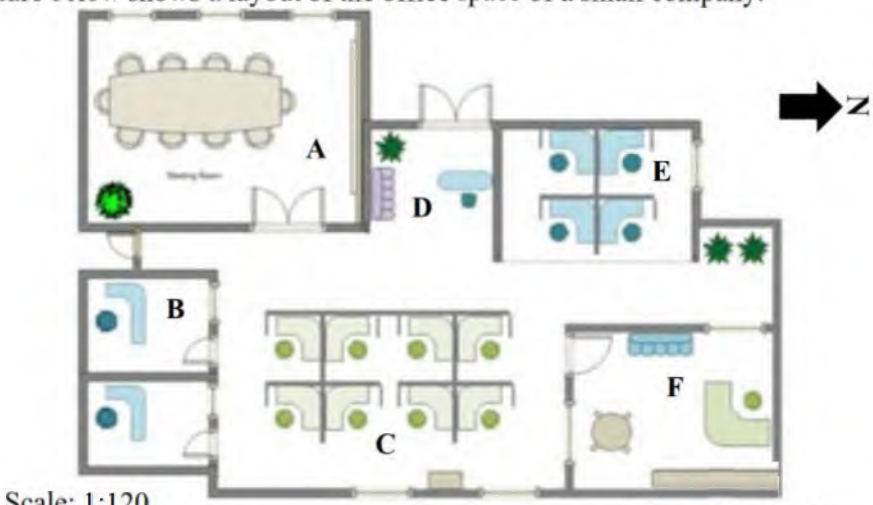
Use the information above to answer the questions that follow.

1.2.1 Write down the name of the representation used above to illustrate all meal options. (2)

1.2.2 Write down the name of the option that is omitted. (2)

1.2.3 Write down, as a fraction, the probability of randomly ordering a Butterbean Curry meal with chicken and soda at this restaurant. (2)

1.3 The picture below shows a layout of the office space of a small company.



Scale: 1:120

[Source:edrawmax.com]

Use the information above to answer the questions that follow.

1.3.1 State whether the following statement is TRUE or FALSE.

The layout plan of the office is an example of 3-Dimensional plan. (2)

1.3.2 Write down the type of scale used in this layout plan. (2)

1.3.3 Identify a feature that was not included in office space B that might be problematic. (2)

1.3.4 Explain the meaning of the scale indicated on the picture. (2)

1.3.5 A letter is assigned to the different rooms or parts of the office. Write down ONLY the letter that best suits the statements below:

(a) An area where clients wait before an appointment. (2)

(b) From the boardroom, exit the double doors, walk in a southeasterly direction pass the cubicles (marked as C), turn into a northerly direction.

Write down the letter of the room you will face. (2)

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QUESTION 2

2.1

The Isaacs family wants to do the Swartberg Circle Route in the December holidays.

ANNEXURE A shows the map of the Swartberg Circle Route. The Swartberg Circle Route is a scenic drive that takes you from Oudtshoorn or Calitzdorp over the Swartberg Pass to the towns of De Rust, Klaarstroom, and Prince Albert.

When driving, allow yourself about 10 min to reach the pass from Prince Albert and 20 min from Oudtshoorn while setting aside roughly 1 hour for the 27 km pass itself.

Use ANNEXURE A and the above information to answer the following questions.

2.1.1 Identify the tourist attraction in Calitzdorp. (2)

2.1.2 Write down the compass direction of Volmoed from Oudtshoorn. (2)

2.1.3 Describe the location of the Meiringspoort Waterfall using the towns and road(s) in the area. (3)

2.1.4 The Isaacs family wants to eat at one of the restaurants on the map.

Determine the probability as a percentage to randomly choose a restaurant on the southern side of ROUTE62 and N12. (3)

2.1.5 There are TWO possible routes from Oudtshoorn to Prince Albert, a shorter direct route or a longer route via the N12.

Calculate the difference in km between the two routes. (5)

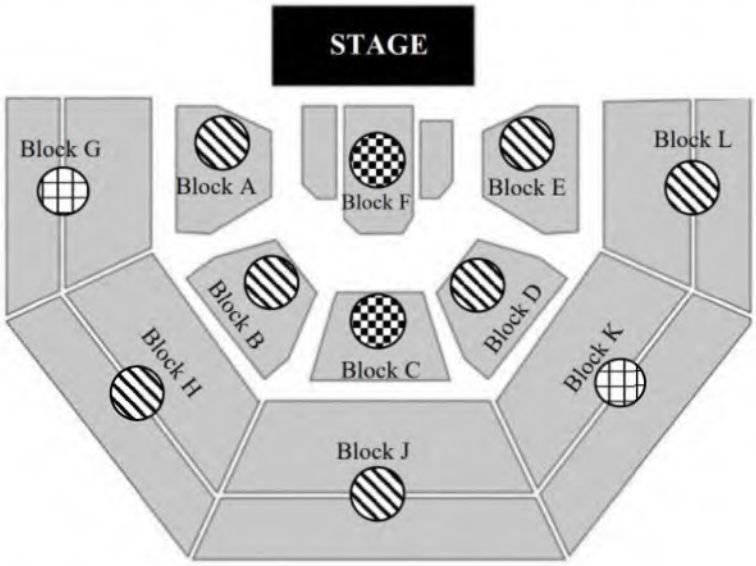
2.1.6 Give ONE reason why it will take longer from Oudtshoorn to Prince Albert if the shortest route is taken compared to the longer route. (2)

2.1.7 The measured distance between Calitzdorp and Oudsthoorn is 10,5 cm.

Determine the scale of the map in the form 1 : … (4)

2.2 Back in Cape Town the Isaacs family attended The Soul Sister concert at the Grand Arena at the GrandWest Casino.

Below is the layout plan of the arena and us it to answer the questions that follow.



	R362 – R485		R486 – R654		More than R654

[Adapted from:viagogo.co.za]

NOTE: All prices include VAT.

2.2.1 Determine the number of blocks that a person could choose from if they want to pay less than R486 per ticket. (2)

2.2.2 Write down ONE possible reason why Block F's tickets are one of the most expensive ones of the arena. (2)

2.2.3 They selected the cheapest tickets in their respective blocks.

Calculate their total cost if they booked as follow:
Block B – 3 tickets
Block K – 2 tickets (4)
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QUESTION 3

3.1 Amanda, a Mathematical Literacy learner was asked by her sister Zonke to design part of the garden, for their new house.

ANNEXURE B shows the design and information of the garden.

Use ANNEXURE B to answer the questions that follow.

3.1.1 Calculate **A**, the width of the vegetable patch, in meter. (3)

3.1.2 Calculate the area, in m^2 of one stepping stone on the path. (2)

3.1.3 Zonke wants to put small stones around the stepping stones on the path. The area of the path which needs to be covered by these small stones is 1,26 m^2.

Show how the area of the path that needs to be covered by these small stones, is calculated. (7)

3.1.4 Zonke buys stones in a bag that can cover an area of 2 600 cm^2. Amanda claims that Zonke will need 4 bags of stones to cover the whole path area between the stepping stones.

Verify, showing all your calculations if her claim is valid. (4)

3.1.5 Show by means of calculations, that the amount of water (in mℓ) required to fill the fish pond up to 85% of its capacity, is 624 943,8 mℓ.

NOTE: 1 cm^3 = 1 mℓ (4)

3.1.6 Amanda advises Zonke to put fencing around the rose beds. Calculate the length of fencing needed in meter.

NOTE: The fence for the rose beds will not be put up against the wall. (3)

3.2 Zonke's doctor stated that a persons' BMI (Body Mass Index) could be one of the indicators of your health status.

Zonke is 1 900 mm tall, and her mass is 85 kg.

TABLE 1 shows the BMI Weight Status Table that classifies people based on their BMI status.

TABLE 1: BMI WEIGHT STATUS TABLE

BMI	Weight Status
Below 18,5	Underweight (U)
18,5 – 24,9	Normal (N)
25 – 29,9	Overweight (OW)
30 and more	Obese (O)

Use the information in TABLE 1 to answer the questions that follow.

3.2.1 Use the formula below to calculate her BMI. Round off the answer to the nearest whole number.

You may use the following formula:

$$\textbf{BMI} = \frac{\textbf{Mass in kg}}{(\textbf{height in m})^2}$$ (3)

3.2.2 Use your answer in 3.2.1 to determine her weight status. (2)

[28]

QUESTION 4

4.1 A Namibian family (Mr. and Mrs. le Roux and their two children), decided to spend their annual vacation at Sun City Resort in South Africa. They embarked on a road trip to save on costs.

ANNEXURE C shows a map that they could use to travel to their destination.

Study the map on ANNEXURE C and answer the questions that follow.

4.1.1 Identify the type of map used. (2)

4.1.2 Write down the number of South African national roads that appear on the map. (2)

4.1.3 Determine the shortest distance from Windhoek to Sun City. (3)

4.1.4 Mr. Le Roux used his Toyota Fortuner with a fuel consumption of 9,5 litres of diesel per 100 km. The average price of diesel is R21,86 per litre.

Calculate the diesel cost in rand of a return trip if they travelled from their home in Windhoek to Sun City. (6)

4.1.5 They left Windhoek at 04:00 and travelled at an average speed of 95 km/h.

Verify, showing all your calculations if they would have arrived at Gobabis before 06:00.

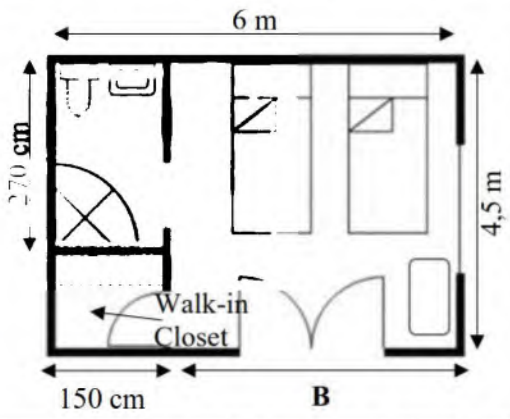
You may use the following formula:

$$\textbf{Speed} = \frac{\textbf{Distance}}{\textbf{Time}}$$

(5)

4.2 On their way to Sun City, the le Roux family booked a chalet at a Bed and Breakfast in Kanye (Botswana). The entire floor of the chalet is carpeted except for the bathroom.

The picture below shows the picture of the bedroom as well as a floorplan of the full chalet.

Picture of the bedroom in the chalet	**Floorplan of the full chalet.**
	
[Source: booking.com]	[Adapted from: pinterest.com]

Use the information above to answer the questions that follow.

4.2.1 The bedroom is a square. Show by means of calculations that the length of the side marked **B** is 4,5 m. (2)

4.2.2 Mr Le Roux mistakenly left the tap of the basin open, that resulted in damages to the carpet.

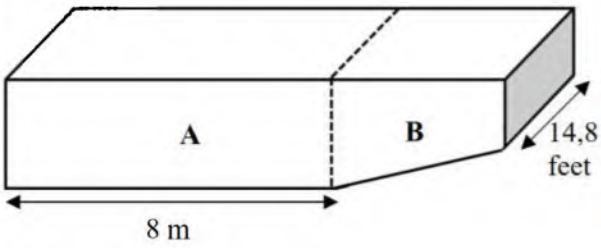
Determine the cost of replacing all the carpets, if the cost of supplying and fitting of new carpets are R245,00 per m^2.

You may use the formula:

Area of rectangle = length × width
Area of a square = side² (7)

4.2.3 The swimming pool below is just outside of their chalet. The pool has a total capacity of 99 kℓ. The capacity of part **B** of the pool is 19,8 kℓ.

The length of the part **A** of the pool is 8 m. The width of the pool is 14,8 feet.

DIAGRAM OF SWIMMING POOL	**PICTURE OF POOL**
	 [Source: planetofhotels.com]

You may use the formula:

Volume of a Rectangular Prism = Length × Breadth × Height

NOTE: 1 m^3 = 1 kℓ

1 m = 3,2808 feet

Mr. Le Roux estimated that the depth of Part **A** of the pool is between 2 and 2,5 m.

Verify, showing all your calculations if his estimation is correct. (6)

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5.1 Nkosi planned to go on a tour to Japan. The tour will include visiting FOUR cities. The cities to be visited are Tokyo, Yamanakako, Kyoto and Osaka.

The map below shows the routes he will be taking from Tokyo.

NOTE: Map is drawn to scale. [Adapted from topasiatour.com]

Study the map and answer the questions that follow.

5.1.1 State whether the following statements are true or false.

a) When stopping at Osaka, Mie is in a south-westerly direction from Osaka. (2)

b) If you fly back from Kyoto to Yamanakako, Aichi will be on your right-hand side. (2)

5.1.2 People are also using trains to travel between cities. The duration of the train ride from Tokyo to Yamanakako is 6 h 32 min.

Verify, using measurements and calculations, if the duration of the train ride from Yamanakako to Kyoto is 18 hours and 32 minutes. (7)

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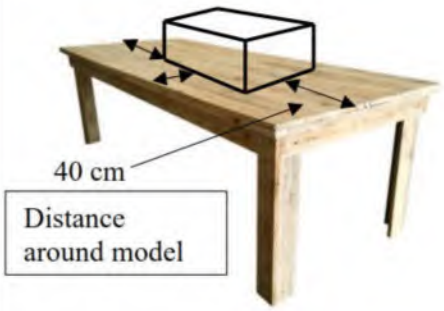
5.2 While Nkosi was in Japan he visited the Great Buddha Hall, the world's largest wooden building until 1998. The Great Buddha Hall in Japan has been rebuilt twice after fire damage.

The current dimensions of the hall are:

- 57 metres (187 feet) long,
- 50 metres (160 feet) wide
- and 49 metres (161 feet) high.

Picture: The Great Buddha Hall	Scale model on table
	
[Adapted from wikipedia.org]	[Adapted from makitihire.co.za]

Study the information above and answer the questions that follow.

5.2.1 Determine the area of the existing great Buddha Hall in square feet (ft^2)

You may use the formula:
Area = Length × Width (3)

5.2.2 The base of the scale model of the Great Buddha Hall is 43,8 cm × 29,2 cm and a table to place it on was specifically made for it.

Determine the perimeter, in centimetre (cm), of the table that the model is placed on, if the distance from the edges model is exactly 40 cm to all sides of the table. (See picture above)

You may use the formula:
Perimeter = 2 × (Length + Width) (5)

5.3 Koyasu Pharmacy in Tokyo offers delivery services to other pharmacies. The company uses two types of cars to deliver boxes to pharmacies within Tokyo.

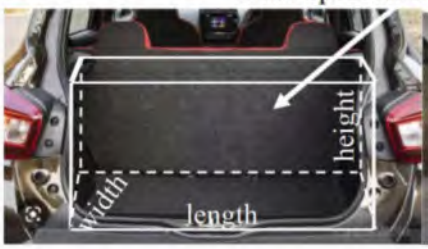
The boxes for ONE specific delivery are square-based with the dimensions as shown on the sketch.

Box used to package the medication.

	Boot Space	
	Suzuki S-Presso	**Renault Kwid**
Length/Width/Height	880/600/570mm	950/680/530mm

You may use the following formula:
Volume = Length × Width × Height

Boot Space of Suzuki S-presso



[Adapted from:carwale.com] [Adapted from fedhealth.co.za]

Study the information above and answer the questions that follow.

5.3.1 Explain the term capacity within the context. (2)

5.3.2 The Suzuki S-presso has a boot capacity of 300 960 cm^3.

The salesman at Renault states that the boot capacity of the Renault Kwid is 41 420 000 mm^3 bigger than the Suzuki S-presso.

Verify, showing all your calculations whether he is correct. (5)

5.3.3 Calculate the number of boxes that will be able to fit into the Suzuki S-presso, if the boxes are to be packed upright. (6)

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TOTAL: 150