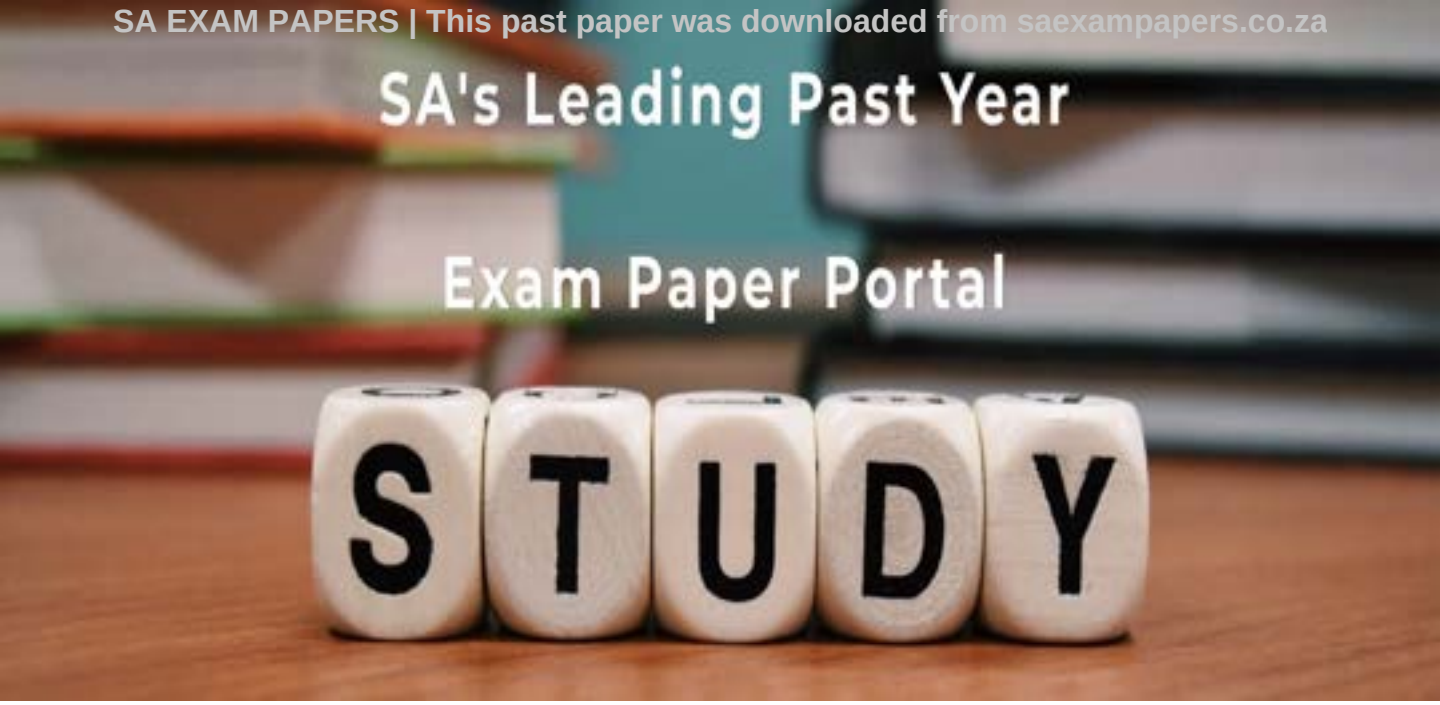

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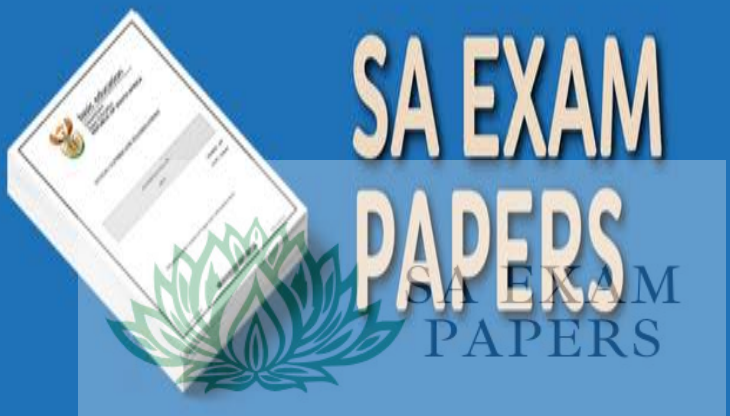


LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

NATIONAL SENIOR CERTIFICATE

GRADE 12

MATHEMATICAL LITERACY P2

SEPTEMBER 2024

MARKS: 150
TIME: 3 hours

EMLITP2

This question paper consists of 15 pages and an addendum with 5 annexures.

QUESTION 1

1.1 Below is a recipe Rebotile uses to make a stuffed eggplant boat with ground beef

Stuffed eggplant boats with ground beef	**Ingredients**	**Instructions**
	3 Eggplants ¼ cup (60 ml) olive oil ½ pound extra lean ground beef 1 Tablespoon (15 ml) onion powder ½ tsp salt	Preparation time: 10 min Cooking time: 55 min Serves: 👩👨👩👨👩👨 • Preheat oven to 370F • Cut eggplants in half length wise • Sprinkle with salt and massage with olive oil • Bake for 45 minutes, placing cut side up. • Make a filling by mixing onion powder with beef and brown for few minutes. • Spoon the mixture into each eggplant and pop back in the oven for 10 minutes.

Adapted from www.hungrypaprikas.com

1.1.1 Write down the maximum number of people this recipe will cater for. (2)

1.1.2 If $\frac{1}{4}$ cup of oil is equivalent to 60 ml, determine how many millilitres there are in one cup. (2)

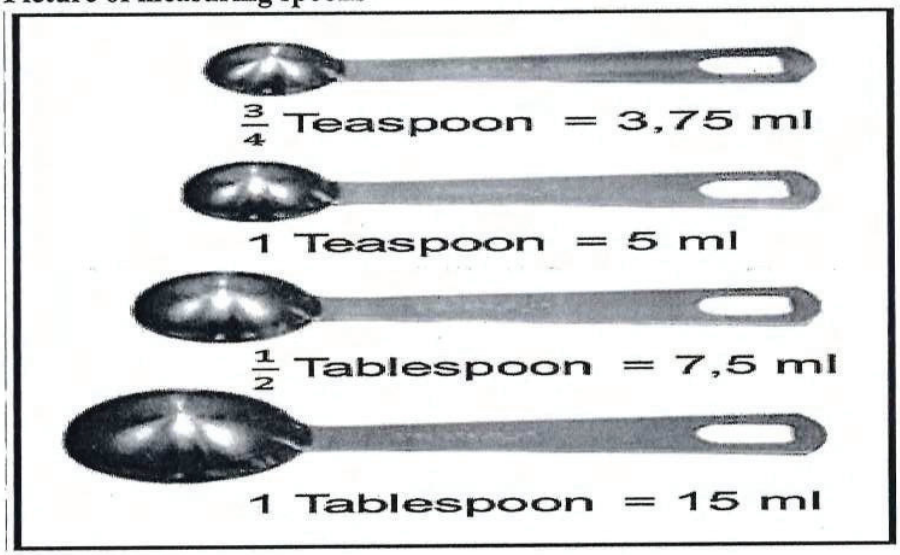
1.1.3 State the total recommended time it will take Rebotile to prepare and cook this dish. (2)

1.1.4 If Rebotile starts preparing this dish at 3:37 pm and finished cooking at 4:42 pm. Write the time she will be ready to serve the dish in 24-hour clock forma (2)

1.1.5 Determine the ratio of onion powder (ml) to olive oil (ml) in simplified form. (3)

1.1.6 Rebotile does not have a measuring jug, but she has measuring spoons.

Picture of measuring spoons



Adapted from bing.com

(a) If Rebotile were to misplace her tablespoon determine the number of teaspoons she will use for the onion powder. (2)

(b) Determine what percentage a $\frac{3}{4}$ teaspoon (3,75 ml) is of one tablespoon (2)

1.2 Use Annexure A to answer the questions that follow:
When Welner was born, he had a mass of 2 890g

1.2.1 What was Welner's mass in kg? (2)

1.2.2 If Welner was in the 10th percentile when he was six months old, what was his mass in pounds? (2)

1.3 Francois wants to travel from Springbok to Cape Town for the Easter holidays. Use Annexure B to answer the questions that follows

1.3.1 Name the type of the map. (2)

1.3.2 Mention the types of roads found on this map. (2)

1.3.3 Determine the Distance from Springbok to Cape Town. (2)

1.3.4 What is the name of the National Park nearer to Springbok? (2)

1.3.5 Calculate the distance from Kamierskron to Clamiwilliam (2)

[29]

QUESTION 2

2.1 Khanyi, a Radiologist and a Marathon runner bought a storage container to convert to a house after moving out of her parents' house.

Picture of the container house

, a

Source: Nextluxury.com

On ANNEXURE C is the floor plan of Khanyi's shipping container house.

Use ANNEXURE C to answer the questions that follow.

2.1.1 Define floor plan according to context. (2)

2.1.2 Determine the number of windows for this plan (2)

2.1.3 Calculate the scale of this plan using the length of the bigger bedroom, in the form of 1: -------- (6)

Note: 1m = 3.28 feet

2.1.4 Explain what is meant by half a bathoom. (2)

2.1.5 What is the general direction of the kitchen from the front door? (2)

2.1.6 Khanyi is opening one of the doors of the container house. Determine the probability that it will be an outside door. Write your answer in decimal form. (3)

2.2 In 2023 Khanyi took part in the Comrades Marathon. The race started at the Pietermaritzburg City Hall and concluded at the Hollywood bets Kingsmead Cricket Stadium in Durban. The total distance covered was **87.7 kilometers**.

Use **Annexure D** to answer the following questions.

2.2.1 What is the highest point on this profile map? (2)

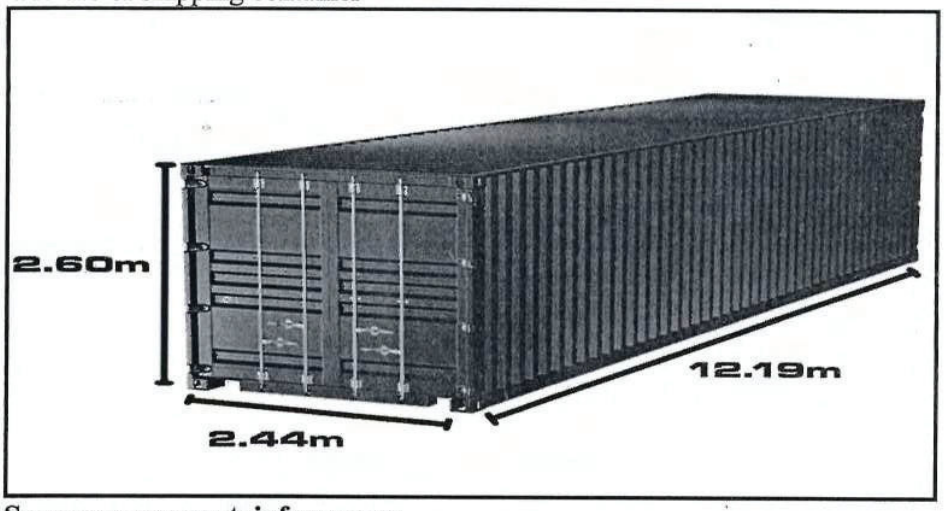
2.2.2. a Indicate the CUT OFF time at Drummond. (2)

b. Explain the importance of cut-off in a marathon. (2)

2.2.3 What is the distance from the starting point to Cowie's hill? (2)

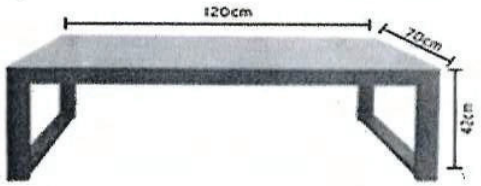
2.3 Khanyi also has a company which manufactures coffee tables. The coffee tables are boxed and packed into shipping containers before they are exported. The dimensions of the boxes used to package the coffee tables are 130cm x 80cm x 50cm.The shipping container have the dimensions of 12.19 m x 2.44 m x 2.60 m

Picture of shipping container



Source: www.containfy.com.au

Picture of coffee table



Dimensions of the table

Length- 120cm

Width – 70cm

Height – 42cm

Source: www.bing.com

2.3.1	Show with calculations which way of packaging the coffee table boxes inside the container will be cost effective.	(9)
2.3.2	For quality purposes containers A and B are randomly checked for defective coffee tables. If one in every 60 coffee tables is defective and the probability of finding a defective coffee table in any of the containers is equally likely, determine the probability of picking a defective coffee table from container B.	(3)
		(37)

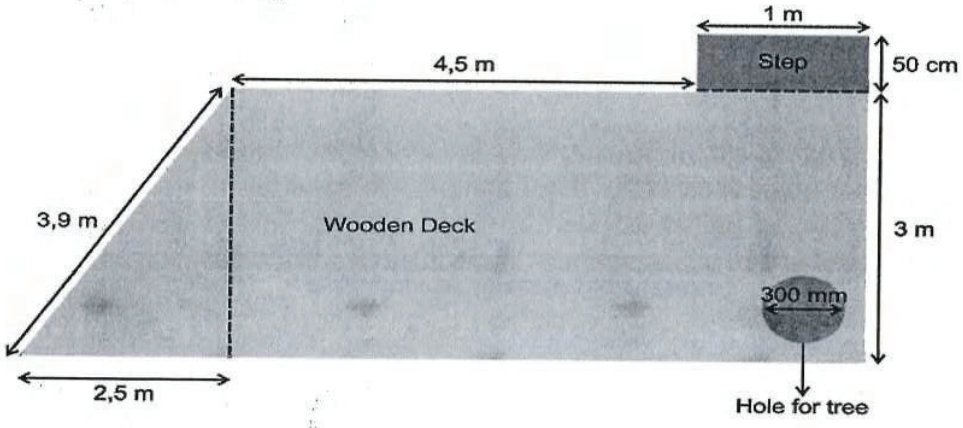
QUESTION 3

3.1 Warona has decided to build a wooden deck in his garden. The wooden deck will have a step to make it easier to get onto the deck. There is a tree in one of the corners of the deck which Warona wants to keep so he will have to cut a circular hole out of the deck to accommodate it.

PICTURE OF THE DECK

Source: www.deck.com/gallery

The deck has the shape below:



3.1.1 Calculate the radius of the hole for the tree in metres. (2)

3.1.2 Show that the surface area of the wooden deck (the lightly shaded area) is more than 20 m^2. (6)

You may use the following formulae:

Area of a Rectangle = Length x Breath

Area of a triangle $= \frac{1}{2}$ base ×perpendicular height

Area of a circle $= \pi \times radius^2$

Use $\pi = 3.142$

3.1.3 The circular hole Warona wants to cut out of the deck has a diameter of 300 mm. The circumference of the tree is 0,99m. Determine with the use of calculations whether the hole will be big enough to accommodate the tree. (3)

You may use the following formulae:

Circumference = $\pi \times$ diameter

OR

Circumference = $2 \times \pi \times$ radius

use $\pi = 3,142$

3.1.4 The wood for the deck that Warona wants to use is sold in strips of 18 cm × 1,2m. Warona wants to play it safe and buy enough wood for 21m^2. He claims that 100 strips will be more than enough. Prove with calculations if his statement is VALID. (5)

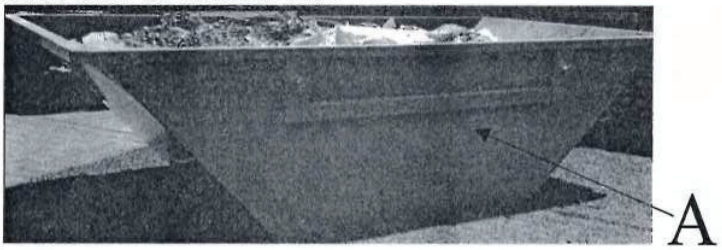
3.1.5 The strips come in packs of 10 and are sold for R149,90 per pack. Calculate how much it will cost Warona for the wooden strips. Round your answer off to the nearest R100. (5)

3.1.6 Warona decides to put a corner edge around the outside perimeter of the deck to finish the deck off and make it look beautiful. (3)

If he buys 20 m, determine with calculations whether that will be enough.

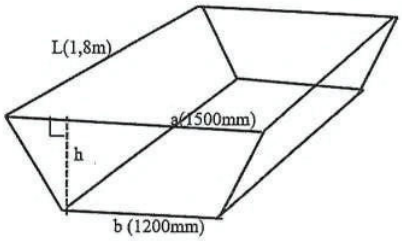
3.2 During these constructions Warona hired a skip bin from the Municipality to use for the ruble. Side **a** and side **b** are parallel to each other. The bin has the following dimensions:
L = 1.8m, side a = 1500mm, side b =1300mm and the height = 0.8m. It weighs 160 kg

PICTURE OF A SKIP BIN



Adapted from bing.com images

Illustration of the dimensions



3.2.1 The municipal manager indicated to Warona that the volume of the skip bin is 2 m^3. Prove with calculations if his statement is correct. Round your answer to nearest whole number. (4)

You may use the following formula:

V = Volume = ½ (a + b) × h × L

3.2.2 Calculate the surface area of the part marked A and its opposite side. (4)

You may use the following formula:

SA = $\frac{1}{2}$ × (sum of parallel sides) × height

[32]

QUESTION 4

4.1

The 2023 Rugby world cup was played in France, South Africa defended their tittle and won the trophy for the fourth time. The Finals were played in Paris at Stade de France stadium which has the capacity of 81 338.The dimensions of the rugby field is 119m x 75m.

Picture of South African Rugby team (affectionately known as the Springboks)

(Source: www.bing.com)

Use the picture above and annexure E to answer the questions that follow:

4.1.1 Define the word capacity according to context. (2)

4.1.2 Write 81 338 in words. (2)

4.1.3 Siya the captain of the Springboks has a BMI of 29.8 kg/m^2 and weighs 103000g. Calculate his height in cm. (4)

You may use the formula: BMI = $\frac{W\ in\ kg}{(H\ in\ m)^2}$

4.1.4 The pitch was fitted with Desso grass master in 2022.The fitting of the grass on the rugby field costs €40/m^2. Calculate how much it cost to fit the whole field in rands. (5)

Note: €1 = R20.36

Desso grass master is a sports playing field surface made of natural grass that has artificial fibres added to it.

4.2 The South African team spent their 28 days in France at the hotel The Domaine des Vannecula in L'isle – Adam 35 km from Paris where the stadium in which they played their finals is situated. (Use Annexure D to answer the questions that follow)

4.2.1 If the team drove from their hotel to the stadium at an average speed of 80km/h, calculate the time it took them to arrive at the stadium in hours, minutes and seconds. (4)

You may use the following formula: D = S x T

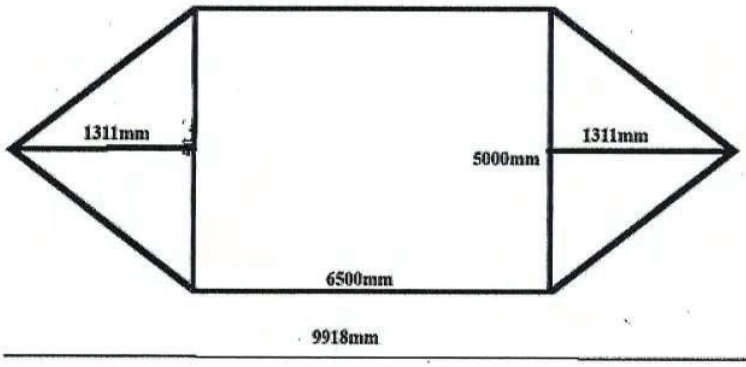
4.2.2 Describe the shortest route from L'isle Adam to Stade de France stadium. (5)

[22]

QUESTION 5

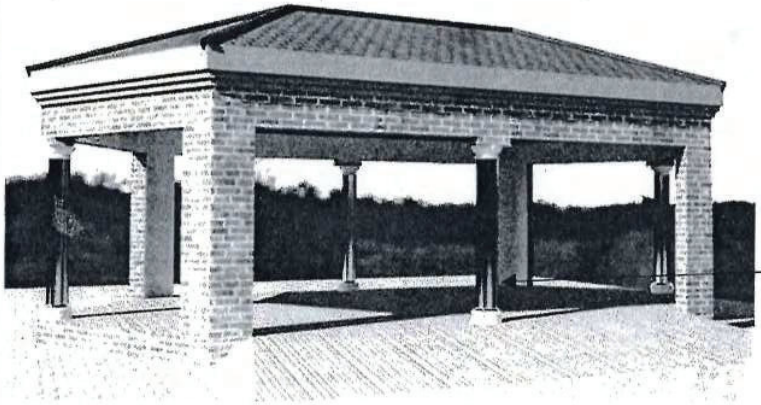
5.1. Basil builds a carport in front of his house. The drawing illustrating the inner dimensions are given below.

DRAWING ILLUSTRATING THE INNER DIMENSIONS

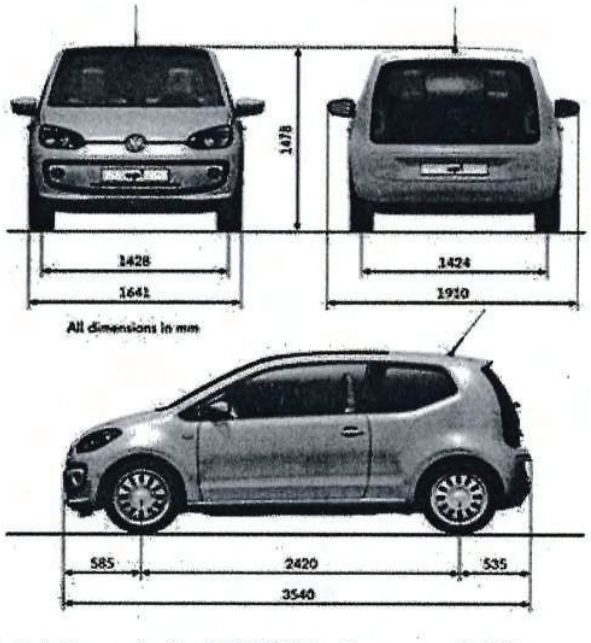


	5.1.1	Calculate the length of the carport in metres.	(2)
	5.1.2	Determine the area covered by the carport in metres squared. **You may use the following formula**: Area of the car port = 2(½ × base × height) + (length × breadth)	(4)
	5.1.3	Show that Basil requires a minimum of 245 tiles to tile the inside of the carport. The dimension of the tile to be used is 400mm by 400mm.	(5)

5.2 Basil will like to cover the four pillar posts with a stainless-steel column cladding to decorate the car port, The height of each pillar post is 180cm and the diameter is 27cm.



[source: Khayahouseplans]

	5.2.1	Calculate the total area of the Metal Basil should buy in square meters. You may use the following formula: Surface area of a cylinder = $2\pi rh$	(6)
	5.2.2	The metal is sold at R584.95 per sheet with the 0,5mm×300mm×500mm	
	(a)	Determine how many sheets will be required to cover the four pillars	(4)
	(b)	Hence calculate how much money Basil will need for the four pillar posts.	(2)
5.3	Basil bought two 2014 Polo Vivo cars. The dimensions of the car are given below. Basil argues that there will be enough space for the third car in the carport.  [SOURCE: Carbodydesign.com/gallery/2009/05/14-volkswagen-polo/11]		
	5.3.1	Verify showing calculations whether his statement is valid or not.	(7)
			[30]
		TOTAL:	**150**