

EXAMINATION		NATIONAL SENIOR CERTIFICATE	
GRADE		12	
DATE		MAY/JUNE 2025	
SUBJECT		MATHEMATICAL LITERACY	
PAPER		2	
MARK TOTAL		150	
DURATION (HOURS)		3	
NUMBER OF PAGES		16	



SOUTH AFRICAN COMPREHENSIVE ASSESSMENT INSTITUTE
SUID-AFRIKAANSE KOMPREENSIEWE ASSESSERINGSINSTITUUT

INSTRUCTIONS AND INFORMATION

1. This question paper consists of 5 questions.
2. Answer **ALL** the questions.
3. Number the answers according to the numbering system used in the question paper.
4. Use the **ANNEXURES** as follow:
ANNEXURE A to answer question 1.1.2
ANNEXURE B to answer question 2.1.1
5. Start each question on a new page.
6. An approved non-programmable and non-graphical calculator may be used.
7. Show **ALL** calculations clearly.
8. Round **ALL** final answers off according to the context, unless stated otherwise.
9. Indicate **ALL** units where applicable. Units **MUST** be shown in final answers.
10. Maps and diagrams are **NOT** necessarily drawn to scale, unless stated otherwise.
11. Write neatly and legibly, in **BLUE** ink only.

QUESTION 1

- 1.1 Ms Botha is a member of The Holiday Club. Her brother, Mr Maree, is turning 69 years old in February 2024. As a gift Ms Botha made a reservation for her brother and his family at the Dunkeld Country & Equestrian Estate.

Below is a printout of the reservation.



The HOLIDAY CLUB
lifelong holiday pleasure

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assist@theholidayclub.co.za | thcpay@theholidayclub.co.za | reservations@theholidayclub.co.za

Member Services Collections Reservations



RESERVATION CONFIRMATION

Dunkeld Country & Equestrian Estate
80 Tonteldoos Road, Dullstroom, Mpumalanga
Reception No: 078 293 1403
Arrival: 16-02-2024 (15:00)
Departure: 23-02-2024 (10:00)

UNIT DETAILS

Number: Chalet 2 **Complex:** Country Chalet **Floor:** Ground
Size: 2 bedroom **View:** Bushveld
Layout: bathroom (shower, toilet, basin), bedroom (2 single beds), kitchen, lounge (double sleeper couch), main bedroom (queen size bed)
Amenities:

Braai	DStv – selected channels	Fireplace
Self-catering	Serviced – excluding public holidays & Sundays	Braai – charcoal
Parking – uncovered Stairs – external & internal	Bathroom towels Linen	Non-smoking unit

[Source: <https://www.theholidayclub.co.za/#Page?cd=0078>]

Use the information given above to answer the questions that follow.

- 1.1.1 State whether the following statements are TRUE or FALSE:

- a) The Dunkeld Country & Equestrian Estate is situated in Dullstroom, Mpumalanga. (2)
- b) Ms Botha's brother will stay for seven nights at the estate. (2)
- c) The chalet will be cleaned on a Sunday. (2)
- d) The maximum number of people that can stay in the chalet is 7 people. (2)

1.1.2 On **ANNEXURE A** is a map of the Dunkeld Country & Equestrian Estate near Dullstroom.

Study the map on **ANNEXURE A** and answer the questions that follow.

- a) Identify the kind of map that is represented by the information above.

Layout map	Street map
------------	------------

(2)

- b) Write down the number of dams in the estate.

(2)

- c) In which general direction are the horse stables from the restaurant?

(2)

- d) Name TWO activities that visitors can do while they are staying at the estate.

(2)

- e) Identify the facility that lies east of dam 15.

(2)

- f) Give the name of the restaurant at reception.

(2)

- g) How many apartments are part of the Lakeview Self Catering Suites?

9	10
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(2)

- 1.1.3 The Bird of Prey & Rehabilitation Centre, established in 1977, is situated just outside Dullstroom. Most of the birds at the centre are mentally or physically injured while some are born in captivity.



Below are the visiting times and entrance fee rates.

Hours:

Saturday	9am – 4pm
Sunday	9am – 4pm
Monday	9am – 4pm
Tuesday	9am – 4pm
Wednesday	Closed
Thursday	Closed
Friday	9am – 4pm

Entrance fee:

Adults	R80
Pensioners	R70
Kids under twelve years	R50

[Source: <https://www.birdsofprey.co.za/>]

Use the information above to answer the questions that follow.

- Determine the number of years the rehabilitation centre exists. (2)
- Mr Maree, his wife, 65-year-old mother, and two children, 10 and 15 years old, decided to spend a day at the rehabilitation centre. What will it cost the grandmother to enter the rehabilitation centre? (2)
- The probability of the centre to be open for 5 days in a week is 100%. State whether this statement is true or false. (2)
- Complete the following sentence by picking the correct answer:
The centre is open _____ hours a day from Mondays to Sundays but is closed on Wednesdays and Thursdays.

7	8	9
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(2)

[30]

QUESTION 2

2.1 Study the map of Mpumalanga given on **ANNEXURE B** and answer the questions that follow.

2.1.1 Except for Mpumalanga, write down the names of TWO other provinces that can be seen on the map. (2)

2.1.2 Express the scale given on the map in the form of 1: ... (4)

2.1.3 Identify the scale in QUESTION 2.1.2. Choose the correct answer.

Bar scale	Number scale
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(2)

2.1.4 State the general direction of Graskop from Dullstroom. (2)

2.1.5 Mr Maree is living in Pretoria. Write down a detailed set of directions that Mr Maree and his family will take to travel from Pretoria to Dullstroom. Make use of national roads, general directions, towns that they pass as well as words like 'turn left' or 'turn right'. (5)

2.1.6 Why do you think it is better to travel on national roads rather than regional roads? Give TWO reasons. (2)

2.1.7 KwaZulu-Natal is known as a coastal province. Explain why. (2)

2.1.8 Assume the scale for this map is 1: 4 000 000. Use this scale to calculate the actual distance between Pretoria and Dullstroom, if the measured distance on the map, as the crow flies, is 6,2 cm.

Write your answer in miles if **1 mile = 1,61 km**.


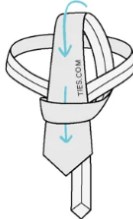

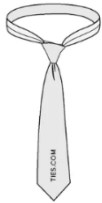

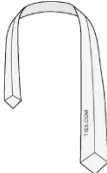
Round your answer off to the nearest mile. (7)

2.1.9 Mr Maree was driving at an average speed of 120 km/h and the family stopped once for 20 minutes. Mr Maree claims that it will take them 3 hours to travel from Pretoria to Dullstroom. Verify Mr Maree's claim.

You may use the formula: **Distance = Speed x Time** (6)

2.2

Mr Maree’s son is in Gr. 9 and wants to learn how to tie a tie. Look at the instructions provided and match the description with the picture to help Mr Maree explain to his son how to tie a tie.

DESCRIPTION		PICTURE
Start with the backside of the tie facing away from you, the wide end is on the right and the small end is on the left.	A	
Fold the wide end under the small end to the left.	B	
Bring the small end across the tie to the right.	C	
Bring the tie up into the loop from underneath.	D	
Bring the tie down through the loop.	E	
Pull down on the wide end to tighten the tie. Slide the knot up to adjust the tie.	F	

[Source: <https://www.ties.com/how-to-tie-a-tie/simple>]

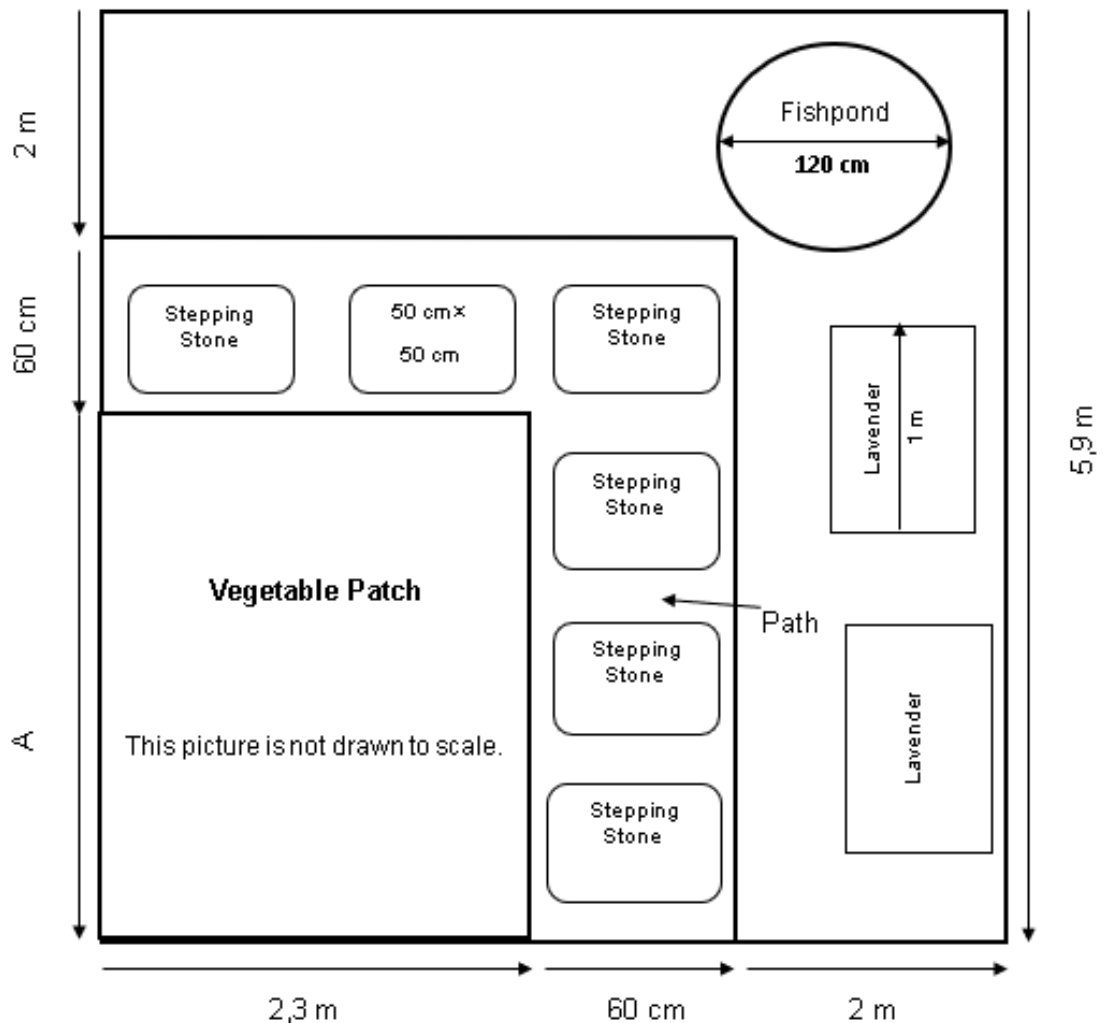
(6)

[38]



QUESTION 3

3.1 Mrs Botha decided she wants to grow her own vegetables. She designed the garden as follow:



NOTE:

- The circular fishpond has a diameter of 120 cm and is 55 cm deep.
- The lavender plants are planted in rectangular flowerbeds with a length of 1 m and width half the diameter of the fishpond.
- The path is 60 cm wide.
- On the path there is six steppingstones each with dimensions of 50 cm x 50 cm.

You may use the following formulae:

Perimeter of rectangle = 2(length + width)

Area of rectangle = length x width

Volume of cylinder = $\pi \times (\text{radius})^2 \times \text{height}$, where $\pi = 3,142$

Circumference of cylinder = $2 \times \pi \times \text{radius}$, where $\pi = 3,142$

Use the information given above to answer the questions that follow.

3.1.1 Show by means of calculations, that the capacity of the fishpond, in millilitres, is 622 116 ml.

You may use the formulae:

$$\text{Volume} = \pi r^2 h, \text{ where } \pi = 3,142$$

NOTE: $1 \text{ cm}^3 = 1 \text{ ml}$ (4)

3.1.2 Calculate **A**, the length of the vegetable patch. (3)

3.1.3 Calculate the total area of the six steppingstones, in m^2 . (3)

3.1.4 Mrs Botha wants to put small stones around the steppingstones on the path. She calculated the area of the path which will be covered by the small stones to be $2,22 \text{ m}^2$.

Show how she calculated the area of the path that will be covered by these small stones to be $2,22 \text{ m}^2$. (7)

3.1.5 Mrs Botha buys the stones in bags that can cover an area of $2\,500 \text{ cm}^2$. Mr Botha claims that Mrs Botha will need 9 bags of stones to cover the whole path area between the steppingstones.

Verify, showing all calculations, if Mr Botha's claim is valid. (4)

3.2 The Botha family's doctor is worried about their daughter, Thalita's health. The doctor stated that a person's BMI could be one of the indicators of your health status.

Thalita is 1 820 mm tall and weighs 96 kg.

The table below shows the BMI weight status that classifies people based on their BMI status.

TABLE 1: BMI WEIGHT STATUS

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

[Source: <https://www.bristolbrc.nhr.ac.uk/news/body-mass-index-may-not-be-the-best-indicator-of-our-health-how-can-we-improve-it/>]

Use the information above to answer the questions that follow.

3.2.1 What does the abbreviation BMI stand for? (2)

3.2.2 Use the formula below to calculate Thalita's BMI. Round off the answer to the nearest whole number.

You may use the formula:

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

3.2.3 Use your answer in QUESTION 3.2.2 to determine Thalita's weight status. (2)




3.2.4 Give Thalita advice on how to improve her health. (4)

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QUESTION 4

4.1 Mrs Botha is going to bake vanilla cupcakes for her church. She uses the following recipe.

Vanilla cupcakes

 Prep: 20 min
 Bake: 22 min
 Cooling: 30 min

Servings:




Ingredients:

150 g all-purpose flour	1 $\frac{1}{4}$ tsp baking powder
$\frac{1}{8}$ tsp salt	2 large eggs
$\frac{1}{4}$ cup unsalted butter	150 g castor sugar
125 ml milk	2 tsp vanilla extract
1 $\frac{1}{2}$ tsp canola oil	

Preparation:

Preheat oven to 350°F.
 Place cupcake liners in a standard muffin tin.
 Pour cupcake mix into the muffin tin, filling the liners $\frac{2}{3}$ of the way up.
 Bake for 22 minutes.

Key:
 Cupcake liner



[Source adapted from: <https://www.recipetineats.com/vanilla-cupcakes/#wprm-recipe-container-50322>]

Use the information given above to answer the questions that follow.

4.1.1 Mrs Botha would like to bake 84 vanilla cupcakes. Determine the number of dozens she needs to bake. (2)

4.1.2 Convert the baking temperature to degrees Celsius ($^{\circ}\text{C}$), rounded off to the nearest 10 degrees.

You may use the formula:

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \div 1,8 \quad (3)$$

4.1.3 Mrs Botha wants to finish with the baking of the 84 vanilla cupcakes at 17:00. Calculate the time she must start preparing the first batch of cupcakes to be finished with the baking on time. (6)

4.1.4 Mrs Botha only has a 2-litre bottle of milk in the fridge. Verify whether the bottle of milk will be enough for 84 cupcakes. (4)

4.2 Mrs Botha wants to bake different flavour cupcakes for the church and decided to conduct a survey to see which flavour is the most popular among the churchgoers.

The table below shows the results of the survey.

Flavour	Blueberry	Vanilla	Chocolate	Total
Like	13	15	(ii)	48
Don't like	(i)	16	13	52
Total	36	(iv)	33	(iii)

4.2.1 Calculate the missing values, (i) – (iv) in the table. Write only the question number and your answer. (4)

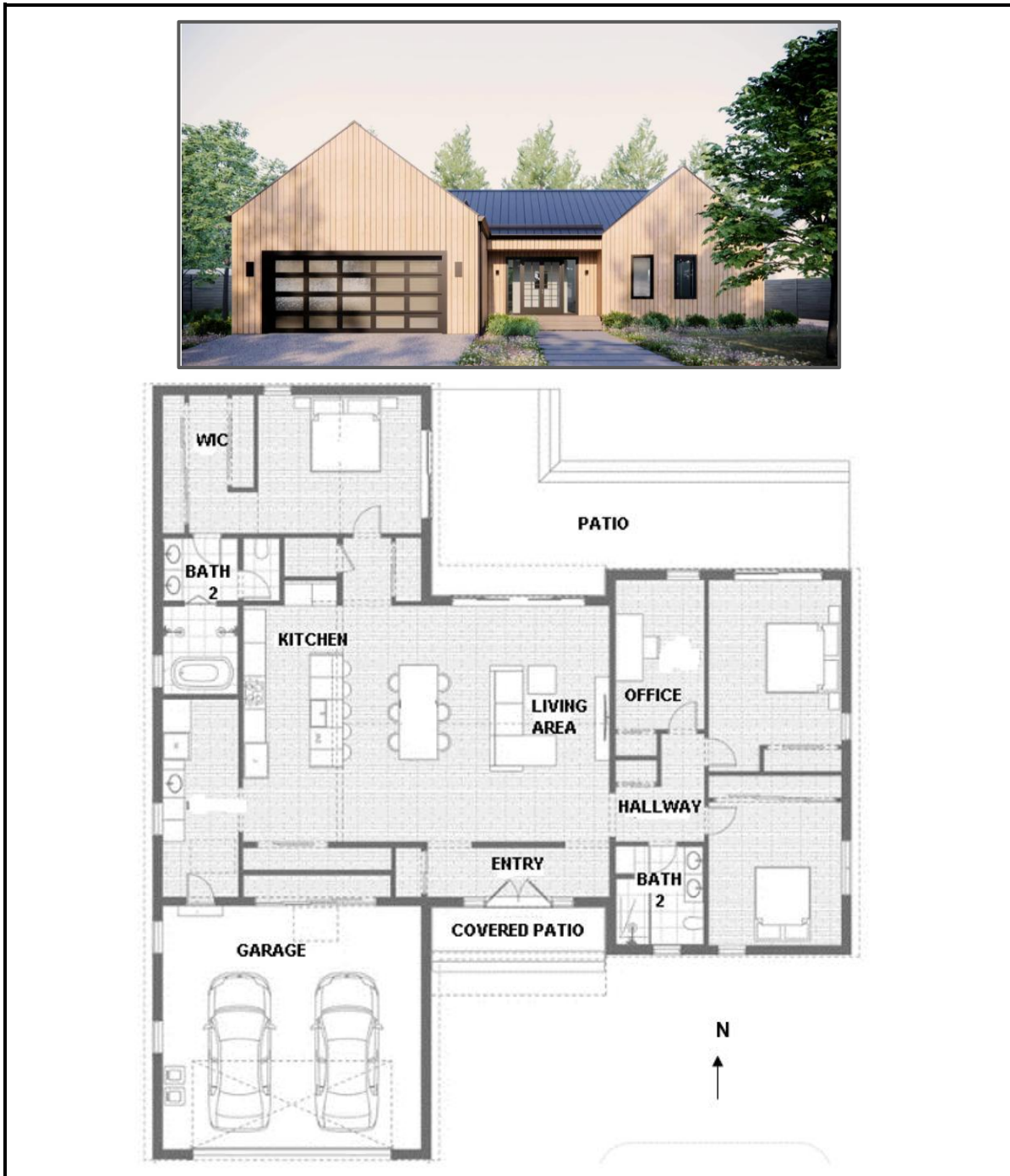
4.2.2 A churchgoer's response is chosen at random. Calculate the probability that this person does not like a blueberry cupcake. Write your answer in decimal form. (2)

4.2.3 According to the survey, which flavour is the most popular? (2)

[23]

QUESTION 5

5.1 Below is the elevation and floor plan of the Bothas' house.



[Source: <https://designwithfrank.com/products/>]

Use the information given above to answer the questions that follow.

5.1.1 Explain the meaning of the term *floor plan*. (2)

5.1.2 Write down the number of windows found on the western wall of the house. (2)

5.1.3 Calculate the area of *bedroom 3*, in m^2 .

The measurements on the plan for *bedroom 3* are given as:

$$14'12'' \times 12'6''$$

You may use the following formulas:

$$\text{Area} = \text{length} \times \text{width}$$

$$1'(\text{foot}) = 12'' (\text{inches})$$

$$1'(\text{foot}) = 0,3048 \text{ m}$$

(6)

5.1.4 In your opinion, give ONE reason why the Bothas prefer the kitchen, dining area and living area to be an open plan space.

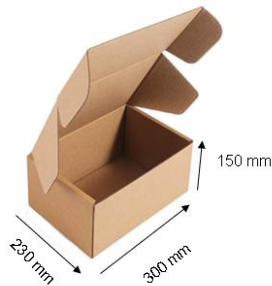
(2)

5.1.5 How many basins are there in the Bothas' house?

(2)

5.2 Mrs Botha orders glasses online.

The glasses are delivered in boxes as shown below:



Dimensions of the box:	Dimensions of each glass:
Length = 300 mm Width = 230 mm Height = 150 mm	Radius = 38 mm Height = 95 mm

Use the information given above to answer the questions that follow.

5.2.1 Show that the height of the glass is 63,3% of the height of the box.

(2)

5.2.2 Mrs Botha wants to order 24 glasses. The manager of the factory claims that all the glasses will fit in 3 boxes. Verify, showing all calculations, whether his statement is valid.

(8)

5.2.3 The cost for one glass is R13,99, excluding VAT. Calculate the total cost for the 24 glasses including VAT.

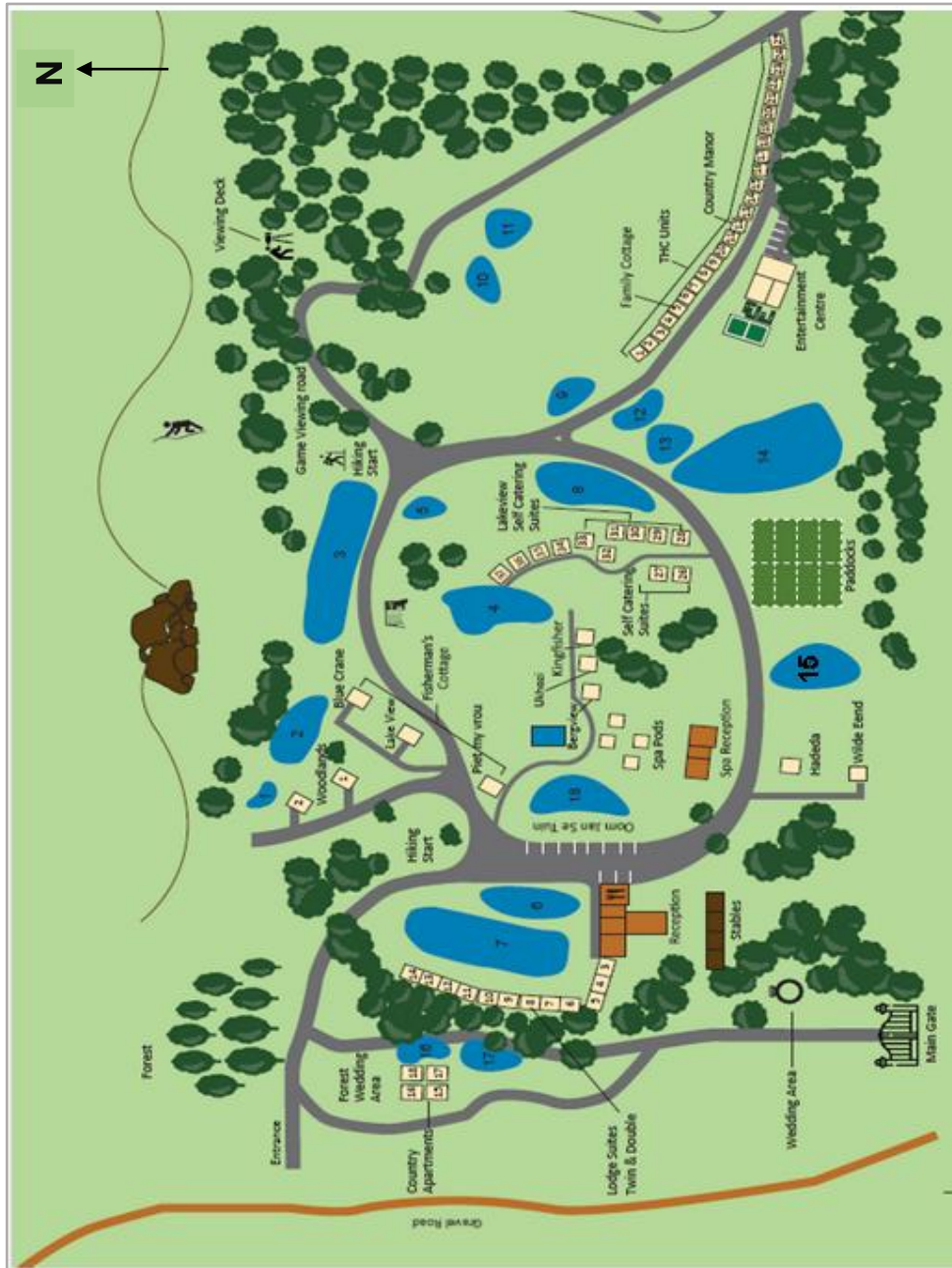
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[27]

GRAND TOTAL: [150]

ANNEXURE A

QUESTION 1.1.2 MAP OF DUNKELD COUNTRY & EQUESTRIAN ESTATE

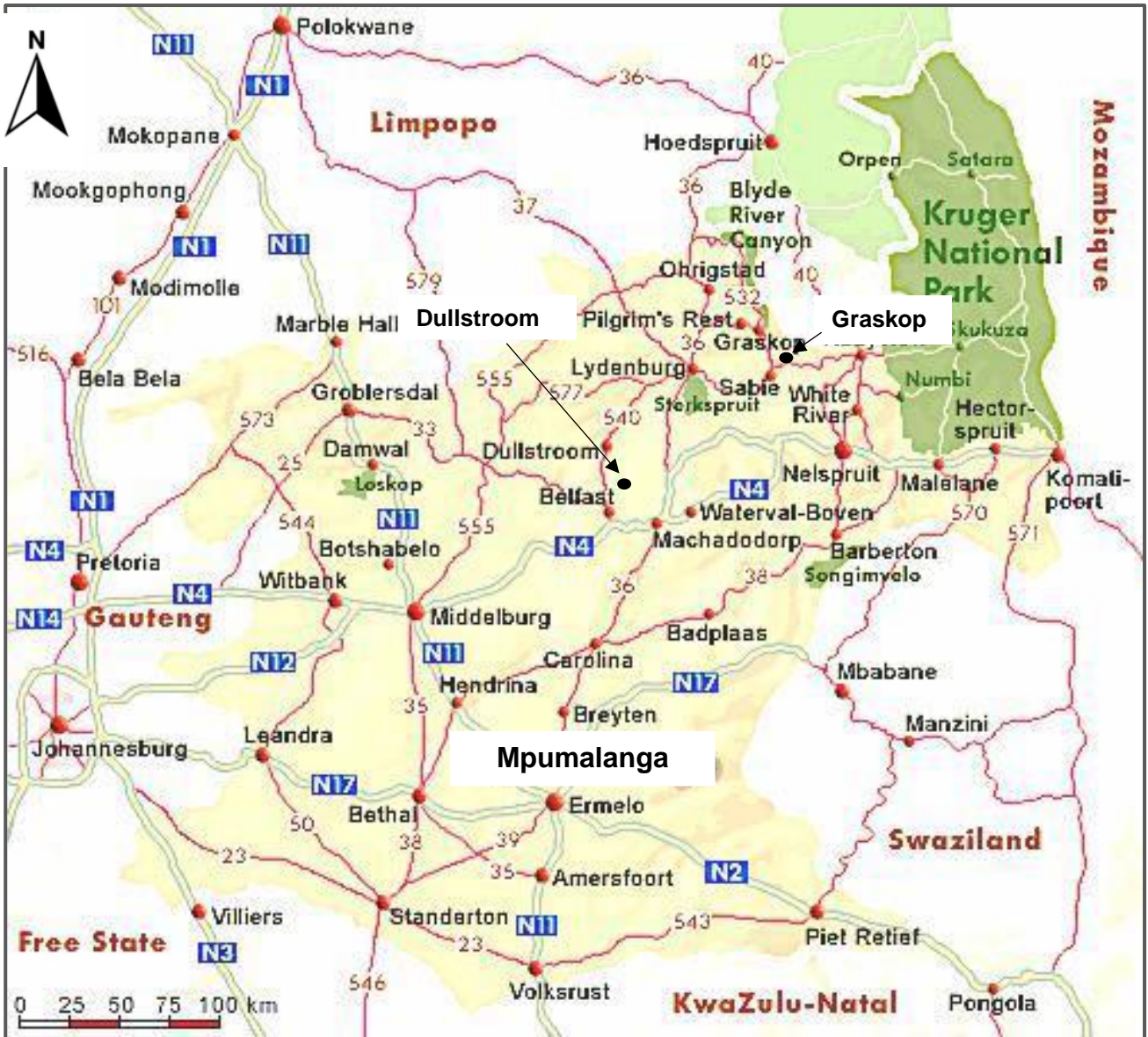


DESCRIPTION		
	Equestrian Estate	 Restaurant
	Country Estate	 Jungle Gym
	Reception, Chapel, Wedding Reception and 1883 Restaurant	 Cold Water Pool
	Sporting Horse Restaurant, Conference Centre and Pro Shop	 Dam
		 Abseiling
		 Rope Course
		 Viewing Deck

[Source: <https://www.dunkeldestate.co.za/wp-content/uploads/2019/11/DunkeldFlyFishingMap.pdf>]

ANNEXURE B

QUESTION 2.1 MAP OF MPUMALANGA



[Source: <https://docplayer.net/185594013-llembe-district-mathematical-literacy-maps-plans-grade10-12.html>]