



METRO SOUTH DISTRICT Common Paper 2

GRADE 12

MATHEMATICAL LITERACY P2

MAY/JUNE 2024

Stanmorephysics.com

Marks: 100

Time: 2 hours

This paper consists of 11 pages and an addendum with 6 annexures.

INSTRUCTIONS AND INFORMATION:

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURES to answer the following questions:
 - ANNEXURE A for QUESTION 1.2
 - ANNEXURE B for QUESTION 2.1.
 - ANNEXURE C for QUESTION 2.2
 - ANNEXURE D for QUESTION 3.1
 - ANNEXURE E for QUESTION 4.1
 - ANNEXURE F 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.
10. Write neatly and legibly.

QUESTION 1

1.1 Eric recently adopted a Bull Dog from the local SPCA and is dedicated to training him well. Eric’s mother bought him Probono Iced dog biscuits that he can use to reward the dog for good behaviour.


<p>Picture of Probono Iced Dog Biscuits:</p> 	<p>Information about the biscuits in the box:</p> <table border="1"> <tr> <td>Mass of the biscuits in the box:</td> <td>0,35 kg</td> </tr> <tr> <td>Width of box:</td> <td>50 mm</td> </tr> <tr> <td>Height of box:</td> <td>75 mm</td> </tr> <tr> <td>Number of biscuits in the box:</td> <td>50</td> </tr> </table>	Mass of the biscuits in the box:	0,35 kg	Width of box:	50 mm	Height of box:	75 mm	Number of biscuits in the box:	50
Mass of the biscuits in the box:	0,35 kg								
Width of box:	50 mm								
Height of box:	75 mm								
Number of biscuits in the box:	50								

TABLE 1: SIZE CATEGORIES OF DIFFERENT SIZED DOGS ACCORDING TO THEIR MASS

Size	Small	Medium	Large	X-Large
Mass	< 10 kg	11 - 26 kg	27 – 45 kg	> 45 kg
Type of dogs	Chihuahua; Maltese; Yorkshire Terrier	Bull Dog; Terrier; Basset	German Shepherd; Alaskan Malamute; Rottweiler	Great Dane; Saint Bernard; Boerboel
Example of size				

[Adapted from: vetcarenews.com]

Use the above information and answer the following questions.

- 1.1.1 Write (in simplified form) the ratio of the width of the box to the height of the box. (2)
- 1.1.2 Express the mass of the biscuits in the box in grams (g). (2)
- 1.1.3 Calculate the average mass of one biscuit in kilograms (kg). (2)

1.1.4 Choose the correct option below that is used to indicate the unit for volume.



Write only the letters A, B or C.

- A. cm^2
- B. kg
- C. mm^3

(2)

1.1.5 Write down the size category of Eric's Bull dog.

(2)

1.1.6 Calculate the difference between the maximum mass and minimum mass of a large-sized dog in kg.

(2)

1.2

Eric is taking his dog to participate in a dog competition in Velddrif. He travels from Cape Town to Velddrif and decides to drive through the West Coast National Park.

A map indicating the route from Cape Town to Velddrif is shown on ANNEXURE A.

Use ANNEXURE A to answer the questions that follow.

1.2.1 Identify the road to be traveled between Cape Town and Velddrif.

(2)

1.2.2 Write down the general direction from Marcus Island to the Seeburg Lookout.

(2)

1.2.3 Identify the number of viewpoints in the West Coast National Park.

(2)

1.2.4 Calculate the distance on the tarred road from the entrance gate of the West Coast National Park to Kraalbaai.

(2)

[20]

QUESTION 2

2.1 Simnikiwe and her friends are planning a trip to the Walter Sisulu Botanical Gardens in Pretoria.

ANNEXURE B shows the map and the roads surrounding Walter Sisulu Botanical Gardens.

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

2.1.1 Identify the type of scale that is given on the map. (2)

2.1.2 Write down the number of roads, that does not have on- or off ramps, that will be crossed by the M5. (2)

2.1.3 Provide a set of driving instructions to a person who is travelling from Bloemfontein on the N1 to the Walter Sisulu National Botanical Gardens.

The person needs to turn left at the 14th avenue off-ramp. (3)

2.1.4 Simnikiwe claimed that if the distance on the map from Makro to the Caltex garage is 4 cm, then the real distance on the ground is 50 km.

Use the given scale to calculate if Simnikiwe's claim is valid. Round your answer to one decimal place. (4)

2.1.5 Simnikiwe used the following directions to get to a location:

- Start at MacDonalDs, then
- turn into CR Swart Road
- continue onto Doreen Rd
- turn left at Hendrik Potgieter
- turn right at the next intersection and continue to the end of the road.

Write down the name of the location. (2)

2.2 Simnikiwe and her friends took part in the Otter Trail running race which covers a total distance of 41 km.

The race starts at Stormsriver and ends at De Vasselot.

ANNEXURE C shows the elevation- and distance map for the Otter Trail Race.

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

2.2.1 Determine the difference in elevation between point A and point B as shown on the elevation map. (2)

2.2.2 The cut off time for the Otter Trail Race is 11 hours.

Calculate the average speed (in km/h) that should be maintained by a participant to finish the race in exactly 11 hours.

You may use the following formula:

$$\text{Distance} = \text{Speed} \times \text{Time} \quad (3)$$

2.2.3 Simnikiwe claims that Bloukrans is the second landmark after the halfway mark.

Verify showing all your calculations if her claim is correct. Explain. (4)

2.2.4 A runner is currently at Scott.

Calculate the distance that still needs to be covered, as a percentage of the total distance. (5)

[27]

QUESTION 3

3.1 ANNEXURE D shows Sharon’s study desk unit with a bookshelf that is fitted against the wall of her room. The diagram with dimensions are also shown.

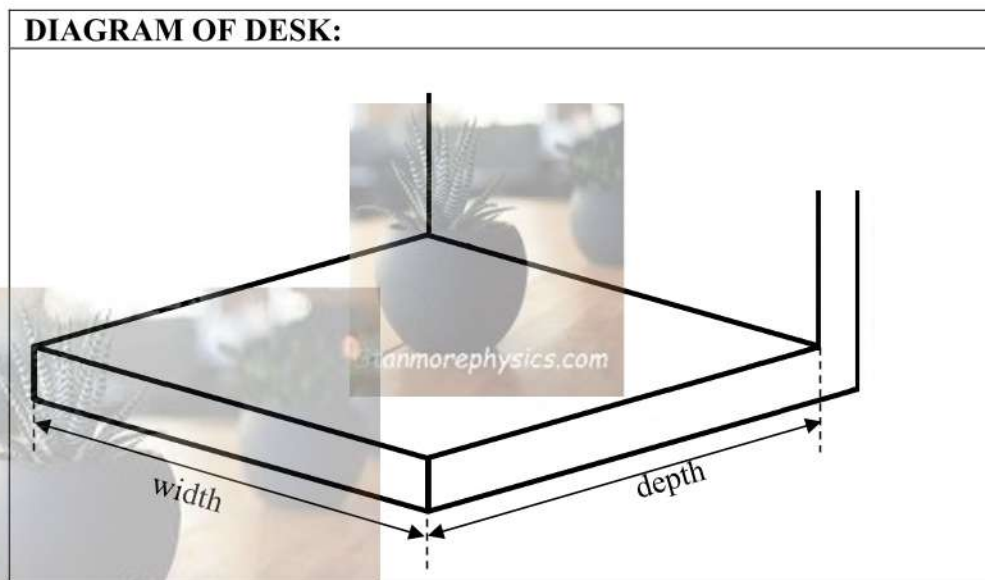
Use ANNEXURE D to answer the questions that follow.

3.1.1 The height of one of the parts of the unit is $\frac{3}{4}$ of a metre.

Write down the name of the part. (2)

3.1.2 Write down the depth of the bookshelf in metre. (2)

3.1.3 The width of the desk is 1,5 m. Calculate in m^2 , the work surface of the desk, rounded to two decimal places.



3.1.4 Calculate in cm, the maximum height of a book packed vertically in the bookshelf. (6)

3.2 Sharon wants to buy a new pencil holder to hold as much stationery as possible such as pens, pencils, kokis and whiteboard markers.

She wants to make a choice between the two pencil holders **A** and **B** as shown in the diagram below.



You may use the following formulae:

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

Volume of a rectangular prism = length \times width \times height

Surface Area of cylindrical holder = $(\pi \times r^2) + (2 \times \pi \times r \times h)$, use $\pi = 3,142$

Surface Area of Rectangular Prism holder = $lw + 2lh + 2wh$

where r = radius

h = height

l = length

w = width

3.2.1 Determine the radius in cm of the cylindrical holder. (2)

3.2.2 Determine the conversion factor for cm to inches, correct to three decimal places, in the form 1 cm = ... inches. (3)

3.2.3 A decorative ribbon will be tied around the rectangular prism pencil holder.

Calculate the total length of the ribbon if an extra 8 cm is added for a bow. (3)

3.2.4 Sharon wants to buy the pencil holder that can hold the most stationery.

Advise her on which pencil holder to choose by showing all relevant calculations. (5)

[27]

QUESTION 4

4.1 Khanya and her family are visiting relatives in Edinburgh Scotland and decide to make use of public transport while there.

They found the Scotrail Train Routes from Edinburgh to Dundee (**ANNEXURE E**) along with the timetable of the trains (**ANNEXURE F**) to help them plan their traveling.

Use the information above along with ANNEXURE E and ANNEXURE F to answer the following questions.

4.1.1 The family decides to take the following train route one day:

- Start the journey at Edinburgh Train Station
- Travel in the direction of Glenrothes with Thornton
- The family then gets off the train three stops after Rosyth.

Write down the station at which the family will get off the train. (2)

4.1.2 Determine as a decimal, rounded to one decimal place, the probability of choosing a mode of transport that does not travel on land constantly. (3)

4.1.3 The family wants to travel from Edinburgh to Dundee without changing trains.

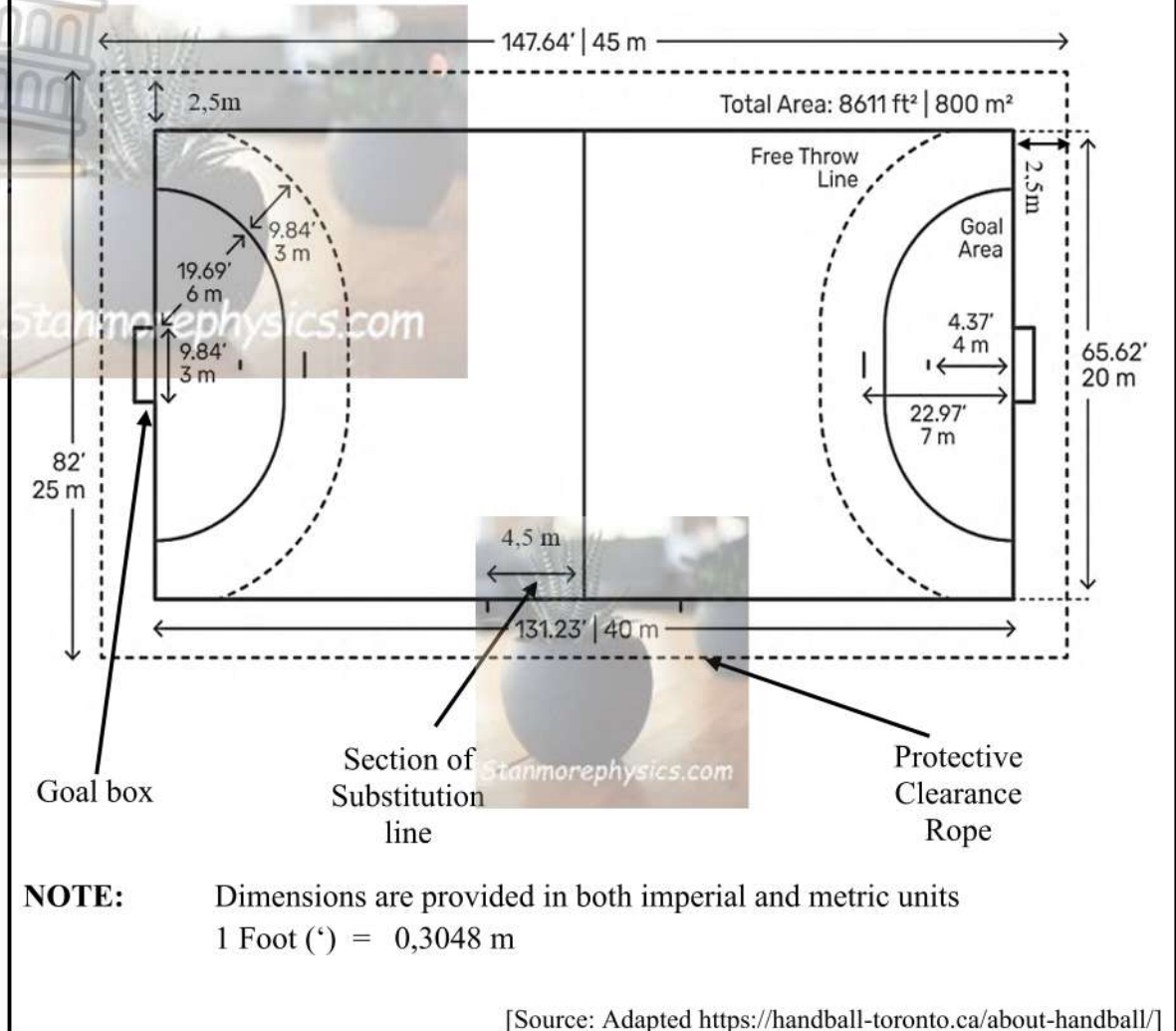
Write down the times at which they can leave from Edinburgh station. (2)

4.1.4 Calculate the difference in time between when the first train and the last train departing from Kirkcaldy. (2)

4.2

While visiting Scotland Khanya and her family attend a handball match. Handball is an Olympic Team Sport.

The layout of a Handball court with measurements is shown in the diagram below:



Use the information above to answer the following questions.

4.2.1 Convert the length of the section of the substitution line provided to feet. (2)

4.2.2 The court will need a protective clearance rope around the outside of the court as indicated on the diagram.

Calculate the amount of protective clearance rope they will need in metres.

You may use the following formula:

$$\text{Perimeter} = 2 (\text{length} + \text{width}) \quad (3)$$



4.2.3 The total volume of one Handball goal box is $6\,000\,000\text{ cm}^3$.

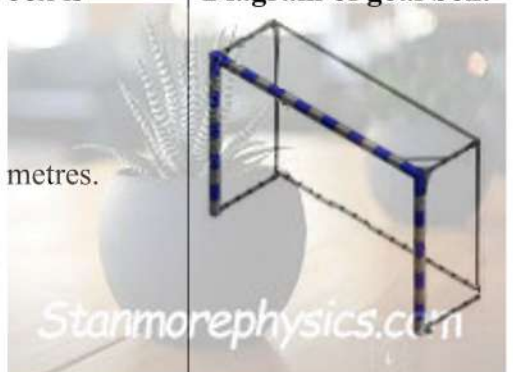
The depth of the goalbox is 1 m.

Determine the height of the goalbox in metres.

You may use the following formula:

$$\text{Volume} = \text{Height} \times \text{Width} \times \text{Depth}$$

Diagram of goal box:



(5)

4.2.4 The goal area will need to be painted in a different colour using the paint below:

RHINO COURT- COURT LUXE	
	
Cost:	R2 608 Incl. VAT
Spread Rate:	$1,5\text{ m}^2/\ell$
Volume:	20 ℓ

[Source: <https://rhinoluxe.co.za>]

The total area to be painted is $113,112\text{ m}^2$.

Khanya did some calculations and claims that the total cost to paint the goal areas will be less than R10 000.

Verify, showing all calculations whether her statement is valid.

(7)

[26]

TOTAL: 100



METRO SOUTH DISTRICT Common Paper 2

GRADE 12

MATHEMATICAL LITERACY

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ADDENDUM

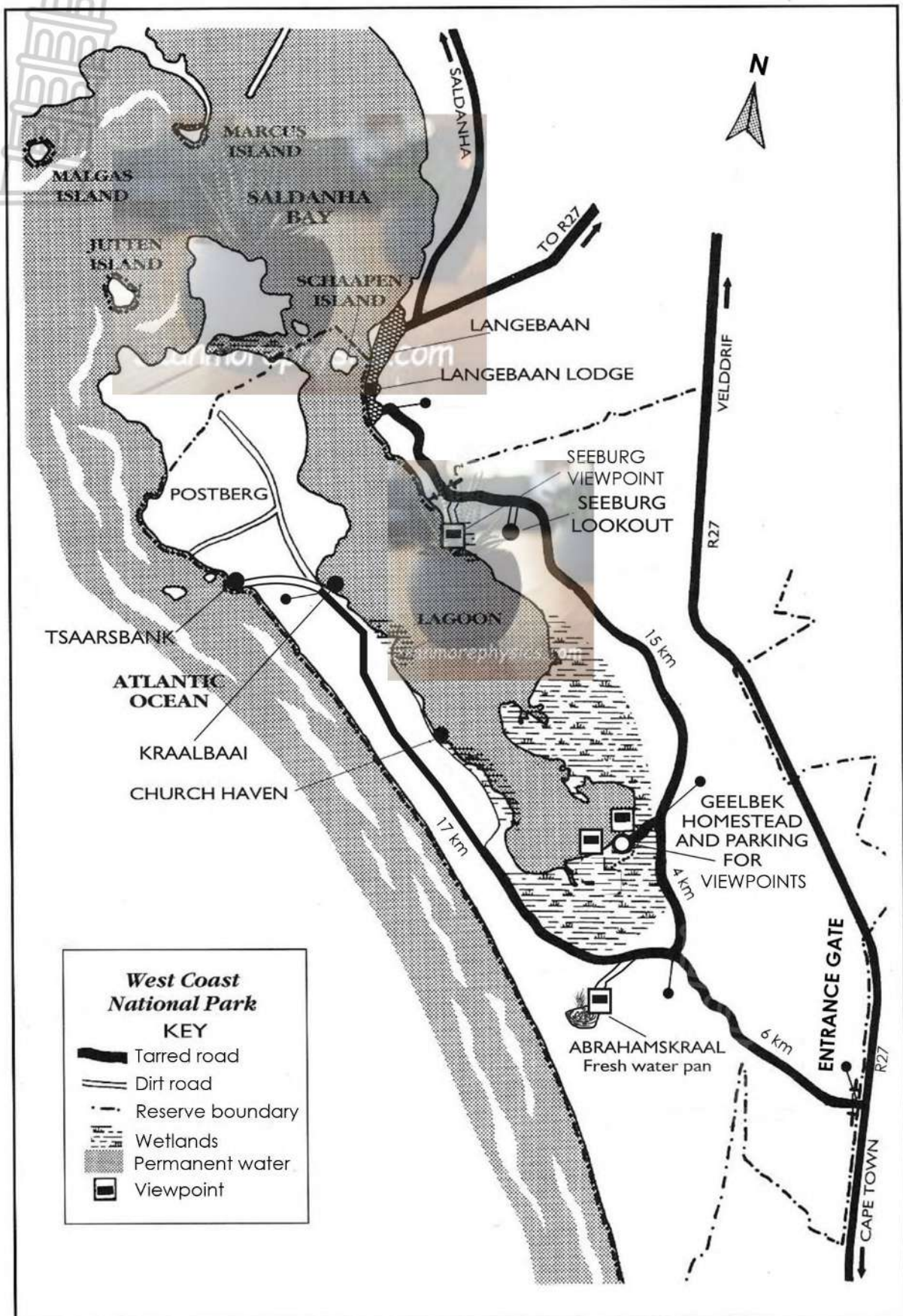
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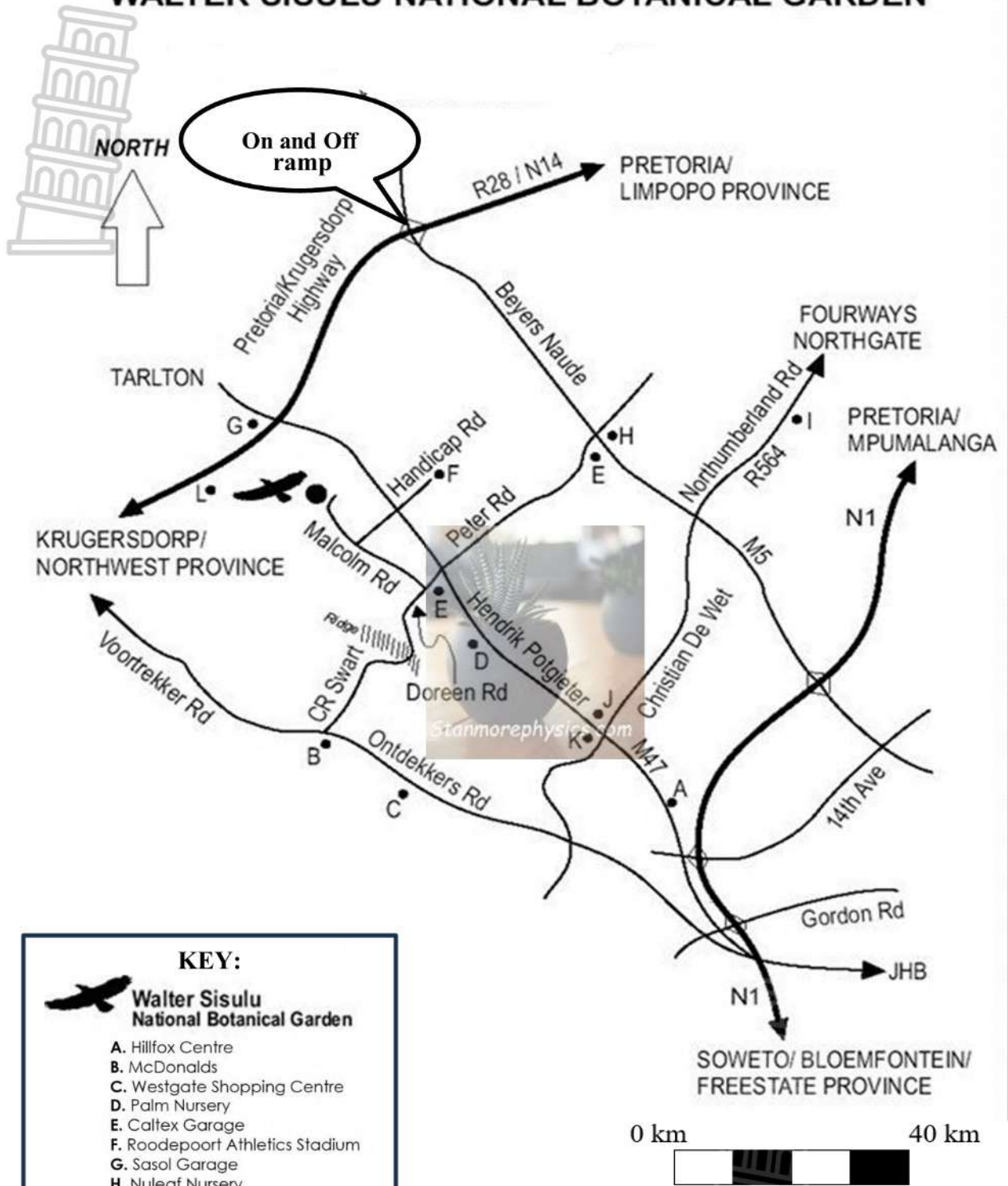
This addendum consists of 7 pages with 6 annexures.

ANNEXURE A
QUESTION 1.2



[Source: www.capebirdclub.org.za/west-coast-national-park/]

WALTER SISULU NATIONAL BOTANICAL GARDEN



KEY:

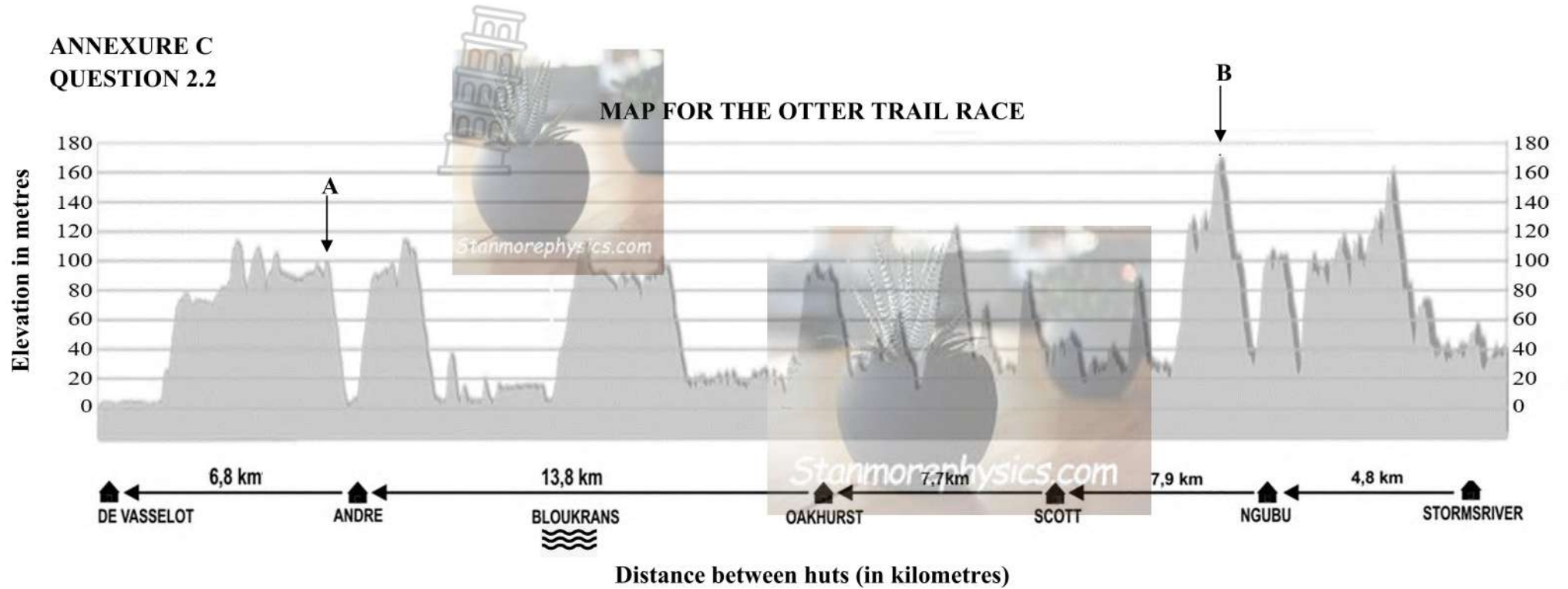
 **Walter Sisulu National Botanical Garden**

- A. Hillfox Centre
- B. McDonalds
- C. Westgate Shopping Centre
- D. Palm Nursery
- E. Caltex Garage
- F. Rodepoort Athletics Stadium
- G. Sasol Garage
- H. Nuleaf Nursery
- I. The Dome, Northgate
- J. Makro
- K. Clearwater Mall
- L. Silver Star Casino

[Source: www.eaglesfare.co.za]

NOTE: The ON and OFF ramp: is the one-way roads entering or exiting the main Highway.

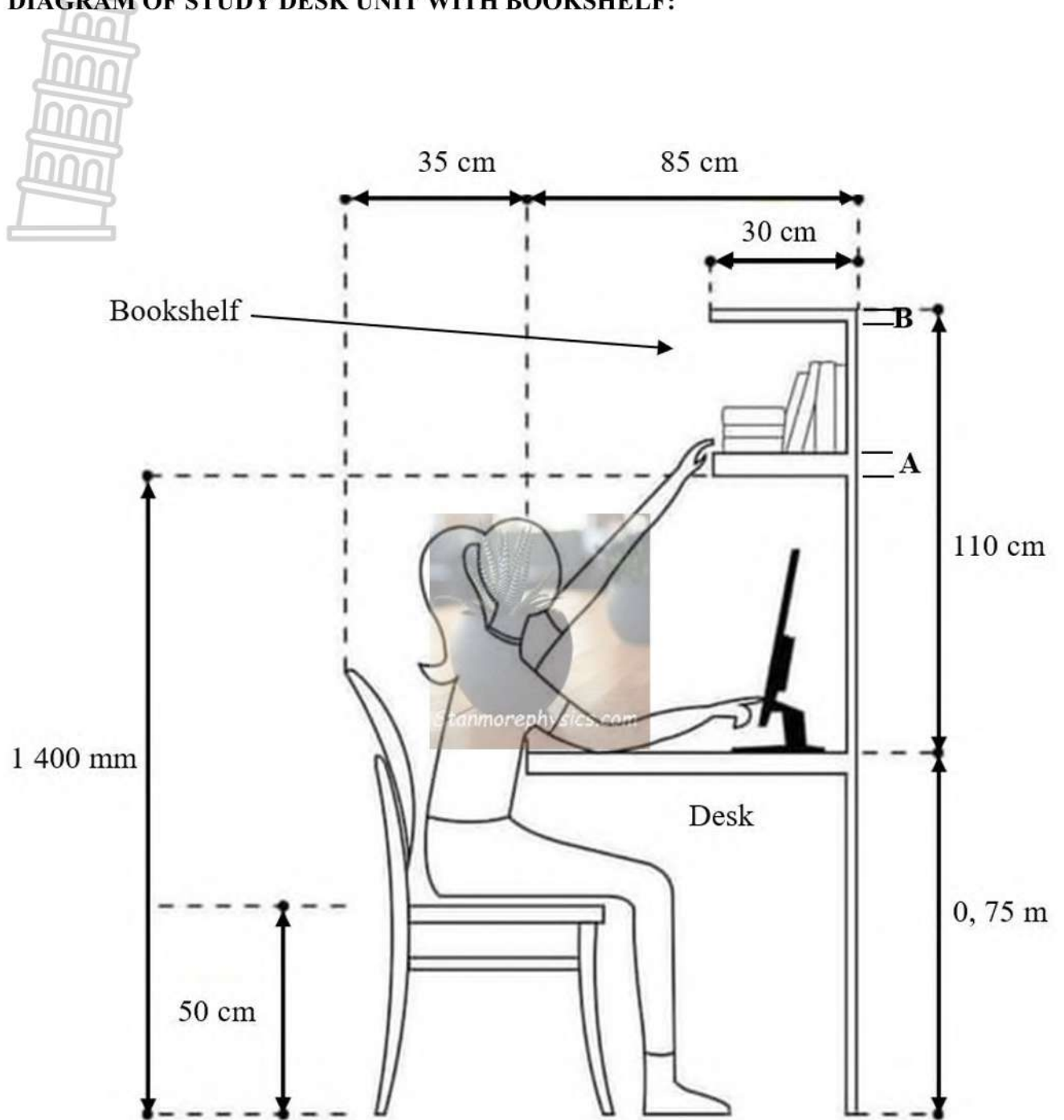
ANNEXURE C
QUESTION 2.2



[Adapted from Otter African Trail Run]

QUESTION 3.1

DIAGRAM OF STUDY DESK UNIT WITH BOOKSHELF:



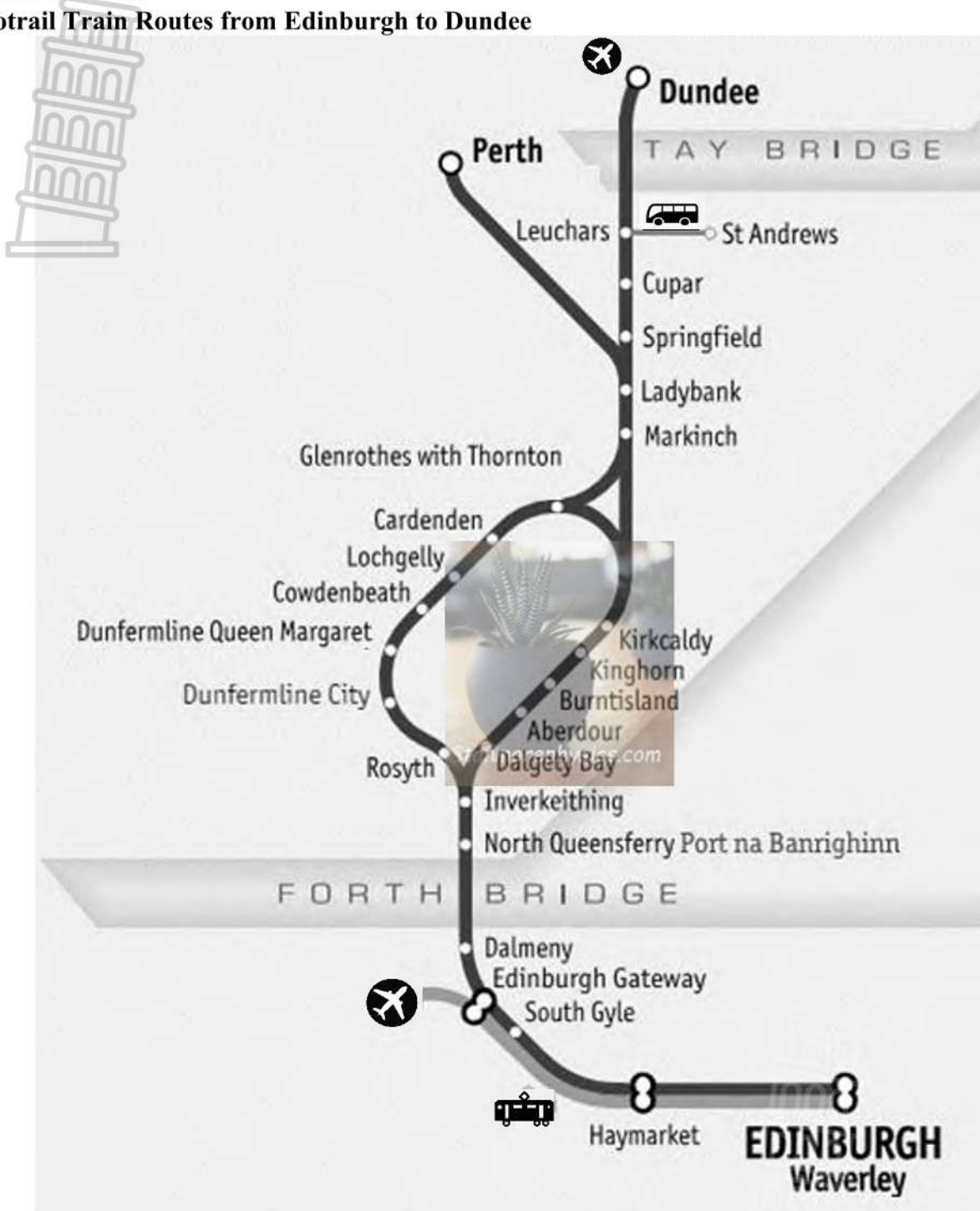
NOTE: The thickness of
A = 3 cm, and
B = 1,5 cm

You may use the following formula:
Area of rectangle = depth × width

ANNEXURE E

QUESTION 4.1

Scotrail Train Routes from Edinburgh to Dundee



Key:		
		
Tram	Airplane	Bus

**ANNEXURE F
QUESTION 4.1**

Timetable of Scotrail Train Routes from Edinburgh to Perth & Dundee

AM train: Edinburgh to Perth & Dundee									
Edinburgh	d	5:30	6:00	6:18	6:30	6:35	6:48	7:00	7:18
Haymarket	a	5:34	6:04	6:22	6:34	6:39	6:52	7:06	7:22
	d	5:35	6:04	6:22	6:35	6:39	6:52	7:06	7:22
South Gyle	d	-	-	-	-	6:44	6:57	-	-
Edinburgh Gateway	d	-	6:10	6:28	-	6:47	6:59	7:12	7:28
Dalmeny	d	-	-	6:34	-	-	7:05	-	7:34
North Queensferry	d	-	-	6:37	-	-	7:09	-	7:37
Inverkeithing	d	5:49	6:23	6:41	-	7:00	7:13	7:25	7:41
Rosyth	d	-	-	6:45	-	-	7:16	-	7:45
Dunfermline City	d	-	-	6:50	-	-	7:21	-	7:50
Dunfermline Queen Margaret	d	-	-	6:53	-	-	7:25	-	7:53
Cowdenbeath	a	-	-	7:00	-	-	7:31	-	8:00
	d	-	-	7:01	-	-	7:31	-	-
Lodhgelly	d	-	-	7:06	-	-	7:37	-	-
Cardenden	d	-	-	7:10	-	-	7:41	-	-
Dalgety Bay	d	-	6:26	-	-	7:04	-	7:28	-
Aberdour	d	-	6:31	-	-	7:08	-	7:33	-
Burntisland	d	-	6:35	-	-	7:13	-	7:37	-
Kinghorn	d	-	6:40	-	-	7:18	-	7:42	-
Kirkcaldy	d	6:04	6:45	-	7:03	7:23	-	7:47	-
Glenrothes with Thornton	a	-	-	7:18	-	-	7:48	-	-
Markinch	d	6:12	6:54	-	-	7:31	-	7:56	-
	d	6:13	6:54	-	-	7:32	-	7:56	-
Ladybank	d	6:20	7:01	-	-	7:40	-	8:03	-
Perth	a	-	-	-	-	8:05	-	-	-
Springfield	d	-	-	-	-	-	-	-	-
Cupar	d	6:27	7:07	-	7:21	-	-	8:09	-
Leuchars	d	6:34	7:14	-	7:28	-	-	8:16	-
Dundee	a	6:48	7:28	-	7:42	-	-	8:30	-

Note:	
d	departure
a	arrival
-	Train does not stop

[Source:scotrail.co.uk]



METRO SOUTH DISTRICT Common Paper 2

MATHEMATICAL LITERACY

JUNE PAPER 2

MARKING GUIDELINES

Stanmorephysics.com

MARKS: 100

Cognitive Distribution for Assessment:

	Level 1	Level 2	Level 3	Level 4
Expected:	30%	30%	20%	20%
Actual:				

Per Topic Distribution for Assessment:

Topic:	Finance	Data Handling	Measurement	Maps & Plans	Probability
% of task:					

Symbol/Kode	Explanation/Verduideliking
M	Method/Metode
MA	Method with accuracy/Metode met akkuraatheid
CA	Consistent accuracy/Volgehoue akkuraatheid
A	Accuracy/Akkuraatheid
C	Conversion/Herleiding
S	Simplification/Vereenvoudiging
RT	Reading from a table/graph/document/diagram/Lees vanaf tabel/grafiek/dokument/diagram
SF	Correct substitution in a formula/Korrekte vervanging in 'n formule
O	Opinion/Explanation/Opinie/Verduideliking
P	Penalty, e.g. for no units, incorrect rounding off, etc./Penalisasie, bv. vir geen eenhede, verkeerde afronding, ens.
R	Rounding off/Afronding
NPR	No penalty for rounding/Geen penalisasie vir afronding nie
AO	Answer only/Slegs antwoord
MCA	Method with consistent accuracy/Metode met volgehoue akkuraatheid
RCA	Rounding consistent with accuracy/Afronding met volgehoue akkuraatheid

These marking guidelines consist of 8 pages.

NOTE:

- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only.
- Rounding is an independent mark.
- In order to award the verification / conclusion mark the candidate must have scored at least one mark in the calculations preceding the final conclusion.

LET WEL:

- As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.
- As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.
- Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.
- Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.
- Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.
- 'n Algemene nasienbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.
- Afronding tel as 'n afsonderlike punt.
- Ten einde die verifikasie/ gevolgtrekking punt toe te ken moes die kandidaat ten minste een punt gekry het in die berekening wat lei tot die finale gevolgtrekking.

QUESTION 1 [20 MARKS]			
Q/V	SOLUTION	EXPLANATION	T&L
1.1.1	Ratio of width to height of the box / $\checkmark RT$ $50 : 75$ $2 : 3 \checkmark MA$	1RT values in correct order 1MA simplified order. (2)	M L1
1.1.2	Mass in grams: $\checkmark C$ $= 0,35 \text{ kg} \times 1\,000$ $= 350 \text{ g} \checkmark A$	1C multiply by 1 000 1A mass in gram (2)	M L1
1.1.3	Mass of 1 biscuit in a box $\checkmark MA$ $0,35 \text{ kg} \div 50$ $= 0,007 \text{ kg} \checkmark A$	1MA mass \div 50 1A mass per biscuit (2)	M L1
1.1.4	C or $\text{mm}^3 \checkmark \checkmark A$	2A correct letter (2)	M L1
1.1.5	Medium size $\checkmark \checkmark A$	2A correct size (2)	M L1

Q/V	SOLUTION	EXPLANATION	T&L
1.1.6	Difference in kg: \checkmark MA $45 \text{ kg} - 27 \text{ kg}$ $= 18 \text{ kg} \checkmark$ A	1MA subtract 27 from 45. 1A simplification (2)	M L1
1.2.1	R27 \checkmark \checkmark RT	2RT correct road (2)	MP L1
1.2.2	South-East / SE \checkmark \checkmark RT	2RT correct direction (2)	MP L1
1.2.3	4 \checkmark \checkmark RT	2RT number of viewpoints (2)	MP L1
1.2.4	Distance from the entrance: $= 6 \text{ km} + 17 \text{ km} \checkmark$ MA $= 23 \text{ km} \checkmark$ A	1MA Add 6 and 17 1A Answer (2)	MP L1



QUESTION 2 [27 MARKS]			
Q/V	SOLUTION	EXPLANATION	T&L
2.1.1	Bar Scale ✓✓ A	2A correct name (2)	MP L1
2.1.2	Three ✓✓ RT	2RT correct number (2)	MP L1
2.1.3	<ul style="list-style-type: none"> From N1 in the westerly direction take the 14th avenue off ramp Immediately turn right into M47/Hendrik Potgieter and continue straight ✓ A Turn left into Doreen Road /Handicap Rd ✓ A Turn right into Malcolm Road. ✓ A The Walter Sisulu National Botanic Garden is situated at the end of Malcolm Road. 	1A turn right on Hendrik Potgieter road(M47) 1A left Doreen Road (also accept Peter Rd) 1A right Malcolm Road (3)	M&P L2
2.1.4	<p><u>Distance on the ground:</u> 3,8 cm = 40 km ✓ A (÷ 3,8) 1 cm = 10,52631579 km ✓ C (× 4) ✓ MCA 4 cm = 42,10526316 km Real Distance = 42,1 km ✓ R</p> <p>Simnikiwe's claim is not true ✓ O</p> <p style="text-align: center;">OR</p> <p><u>Distance on the ground:</u> ✓ A $= \frac{40 \text{ km}}{3,8 \text{ cm}} \times 4 \text{ cm} \checkmark \text{ MCA}$ ✓ M = 42,10526316 km = 42,1 km ✓ R</p> <p>Simnikiwe's claim is not true ✓ O</p>	<p>1A measuring 3,8 cm 1M dividing by 3,8 1MCA multiply by 4</p> <p>1R correct rounding</p> <p>1O Opinion</p> <p>OR</p> <p>1A measuring 3,8 cm 1M dividing by 3,8 1MCA multiply by 4</p> <p>1R correct rounding 1O Opinion [Accept range 3,5 to 4,2] (5)</p>	MP L4
2.1.5	Roodepoort Athletic Stadium ✓✓ A	2A correct location (2)	MP L2
2.2.1	Elevation difference = 170 m – 100 m ✓ MA = 70 m ✓ CA	1RT both values 1MA subtract correct values. 1CA answer [Accept 165 – 175 as range for point B] (3)	MP L2

Q/V	SOLUTION	EXPLANATION	T&L
2.2.2	<p>Minimum average speed = $\frac{\text{distance}}{\text{time}}$</p> <p>✓MA</p> <p>Minimum average speed = $\frac{41 \text{ km}}{11 \text{ hours}}$ ✓SF</p> <p>Minimum average speed = 3,727273 km/h</p> <p>Minimum average speed = 3,73 km/h ✓CA</p>	<p>1MA changing the subject of formula</p> <p>1SF correct substitution</p> <p>1CA average speed</p> <p>NPR</p> <p>(3)</p>	<p>MP</p> <p>L2</p>
2.2.3	<p>Halfway = $41 \div 2$</p> <p>= 20,5 ✓MA</p> <p>Distance from start to Oakhurst = $4,8 + 7,9 + 7,7$ ✓RT</p> <p>= 20,4 km ✓A</p> <p>Simnikiwe's claim is not true, Bloukrans is the first landmark after the halfway mark and not the second landmark. ✓O</p> <p>OR</p> <p>Halfway = $41 \div 2$</p> <p>= 20,5 ✓MA</p> <p>Distance from Oakhurst to endpoint = $6,8 + 13,8$ ✓RT</p> <p>= 20,6 km ✓A</p> <p>Simnikiwe's claim is not true, Bloukrans is the first landmark after the halfway mark and not the second landmark. ✓O</p>	<p>1MA halfway mark</p> <p>1RT correct values</p> <p>1A distance to Oakhurst</p> <p>1O reason.</p> <p>OR</p> <p>1MA halfway mark</p> <p>1RT correct values</p> <p>1A distance from Oakhurst</p> <p>1O reason.</p> <p>(4)</p>	<p>MP</p> <p>L4</p>
2.2.4	<p>Distance from Scott:</p> <p>= $7,7 + 13,8 + 6,8$ ✓ RT</p> <p>= 28,3 km ✓ A</p> <p>As a % = $\frac{28,3}{41} \times 100\%$ ✓ M</p> <p>= 69,02% ✓ CA</p> <p>OR</p> <p>Distance to Scott:</p> <p>= $4,8 + 7,9$ ✓ RT</p> <p>= 12,7 km</p> <p>Remaining distance = $(41 - 12,7) \text{ km}$</p> <p>= 28,3 km ✓ A</p> <p>As a % = $\frac{28,3}{41} \times 100\%$ ✓ M</p> <p>= 69,02% ✓ CA</p>	<p>1RT correct values</p> <p>1A correct distance</p> <p>1A denominator</p> <p>1M percentage calculation</p> <p>1CA correct answer</p> <p>OR</p> <p>1RT correct values</p> <p>1A correct distance</p> <p>1M percentage calculation</p> <p>1A denominator</p> <p>1CA correct answer</p> <p>(5)</p>	<p>MP</p> <p>L3</p>
			[27]

QUESTION 3 / VRAAG 3 [27 MARKS/PUNTE]			
Q/V	Solution/Oplissing	Explanation/Verduideliking	T&L
3.1.1	The desk / lessenaar ✓✓A	2A desk (2)	M L1
3.1.2	Depth / Diepte = 30 cm ✓RT (÷ 100) = 0,3 m ✓C	1RT depth in cm 1C to m (2)	M L1
3.1.3	Area / Oppervlakte = 1,5 m × 0,85 m ✓ RT ✓C = 1,275 m ² ✓CA = 1,28 m ² ✓R	1RT correct dimension 1C convert to m 1CA area in m ² 1R rounded value (4)	M L2
3.1.4	Exterior height of bookshelf / Buitehoogte van boekrak ✓C ✓C = (110 cm + 75 cm) – 140 cm = 185 – 140 ✓MCA = 45 cm ✓CA Maximum height of a book / Maksimum hoogte van 'n boek = 45 cm – A – B = 45 cm – 3 cm – 1,5 cm ✓MA = 40,5 cm ✓CA	1C mm to cm 1C m to cm 1MCA subtraction of height of bookshelf from floor 1CA exterior height 1MA subtract thickness (A&B) 1CA max height of book (6)	M L3
3.2.1	Radius = 8 cm ÷ 2 ✓MA = 4 cm ✓A	1MA concept of radius 1A radius in cm (2)	M L1
3.2.2	6 cm = 2,36 inches ✓MA 1 cm = 2,36 ÷ 6 ✓M = 0,393 ✓R	1MA working with ratio 1M divide by 6 1R rounded value (3)	M L2
3.2.3	Ribbon around the holder = 6 cm × 4 = 24 cm ✓MA Extra ribbon = 24 + 8 ✓MA = 32 cm ✓CA	1MA finding perimeter 1MA adding 8 1CA total length (3)	M L2
3.2.4	Volume of A = 3,142 × 4 ² × 10 ✓SF = 502,72 cm ³ ✓CA Volume of B = 6 × 6 × 9 ✓SF = 324 cm ³ ✓A ∴ Sharon must buy A/cylindrical pencil holder. ✓O	CA from 3.2.1 1SF substitution 1CA volume 1SF substitution 1A volume 1O conclusion (5)	M L4
		[27]	

Q/V	SOLUTION	EXPLANATION	T&L
	<p>Width = 3 m × 100 ✓ C Width = 300 cm</p> <p>Depth = 100 cm</p> <p>$V = h \times w \times d$ ✓ SF ✓ RT $6\,000\,000\text{ m}^3 = \text{height} \times 300\text{ cm} \times 100\text{ cm}$ $\frac{6\,000\,000\text{ cm}^3}{30\,000\text{ cm}^2} = \text{height}$ ✓ MA</p> <p>200 cm = height</p> <p>Height = 2 m ✓ CA</p>	<p>1 C m to cm</p> <p>1SF correct values into formula 1RT 3m/300 cm</p> <p>1MA changing subject of formula</p> <p>1CA solution</p> <p>(5)</p>	
4.2.4	<p>$113,112\text{ m}^2 \div 1,5\text{ m}^2$ ✓ MA = 75,408 ℓ ✓ A = 75,408 ℓ ÷ 20 ℓ ✓ MCA = 3,7 tins ≈ 4 tins ✓ RCA</p> <p>$4 \times R2\,608$ ✓ MCA = R10 432 ✓ CA</p> <p>∴ Not valid ✓ O</p>	<p>1MA divide by spread rate 1A number of litres 1MCA calculating number of tins 1 RCA number of tins</p> <p>1MCA Calculating cost 1 CA total Price</p> <p>1O Opinion</p> <p>(7)</p>	F L4
			[26]
		TOTAL – 100 marks	