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KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA




# NATIONAL SENIOR CERTIFICATE

## GRADE 11

## MATHEMATICAL LITERACY

## COMMON TEST

## JUNE 2022

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**MARKS: 100**

**TIME: 2 hours**

**This question paper consists of 8 pages and an addendum with 2 annexures.**

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## INSTRUCTIONS AND INFORMATION

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ANNEXURES in the ADDENDUM to answer the following questions:
   - ANNEXURE A for QUESTION 1.3
   - ANNEXURE B for QUESTION 2.2
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 calculation clearly.
7. Round off ALL the final answers appropriately according to the given context, unless stated otherwise.
8. Indicate units of measurements, where applicable.
9. Maps and Diagrams are NOT necessary drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

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## QUESTION 1

1.1 Municipality charges its domestic consumers an electricity cost of 103.42 cents per kilowatts used.

1.1.1 Convert the tariff charge into rand value. (2)

1.1.2 Determine the cost of using 348.2kwh by the household. (2)

1.1.3 An elderly couple pays 87.5% of the original cost as per pensioners discount.

Determine the couples cost in cents (2)

1.2 A scale on the map is given as 1:200 000

1.2.1 Give the name of the scale on the above statement. (2)

1.2.2 Explain the meaning of the scale given above in words. (2)

1.2.3 Convert 200 000cm into meters. (2)

1.3 Two Oceans Marathon is one of the most popular event in the Cape Town annual calendar. Study the map carefully in ANNEXURE A and then answer the following questions.

1.3.1 The first medics are found after how many kilometres during the race? (2)

1.3.2 How many kilometres does the marathon run? (2)

1.3.3 Where is the highest point of the marathon found? (2)

1.3.4 Mention two places where water points are found in the marathon route. (2)

**[20]**

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## QUESTION 2

2.1 Mr Wayne works and receives his payslip every month. Study the payslip below and answer the questions that follow.

| ZAMA ZAM PACKAGING | | | |
|---|---|---|---|
| | | Payslip Number :14 | |
| **Employee details** | | | |
| ID:9803050936086 | Mr Wayne | Pay date: 31 May 2022 | |
| Bank Account:984****4281 | | Department: General Affairs | |
| Tax No. 12537514 | | Occupation: Cleaning service staff | |
| **EARNINGS** | **AMOUNTS** | **DEDUCTIONS** | **AMOUNTS** |
| Basic Salary | R5 200 | Provisional tax (SITE) | R22 |
| Meal Allowance | R1 000 | Retirement insurance | R250 |
| Transport Allowance | R1 000 | UIF (1% of gross salary) | **A** |
| | | Company load | R680 |
| Total Gross salary | **R7 200** | **Total deductions** | **B** |
| | Net salary = **C** | | |
| ***Unemployment insurance fund is levied at most for 1% of gross income*** | | | |
| ***Maximum UIF threshold equates to R177,12*** | | | |

2.1.1 What is Mr Wayne's date of birth? (2)

2.1.2 Determine in year(s) and month(s) for Mr Wayne service period on this company. (2)

2.1.3 Calculate the value of **A**, which is Mr Wayne's monthly UIF contribution. (2)

2.1.4 Hence, calculate the missing value **B** and **C** in the payslip. (4)

2.1.5 Mr Wayne state that his UIF claim benefit will be less than R140 per annum.

a) Verify Mr Wayne statement showing all calculations, whether his statement is correct.

You may use the following formula:

$$\textbf{UIF benefit} = \frac{\textbf{Annual gross x 60\%}}{\textbf{365 days}}$$

(4)

b) Mr Wayne states that he can still claim his UIF benefits after four years of resignation.

Critically comment on Mr Wayne's statement (3)

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2.2 Study ANNEXURE B showing Cape Town International Airport Parking tariffs and answer the questions that follow.

2.2.1 Give the maximum number of hours a car can park in the **pickup zone** for R45 paid. (2)

2.2.2 How much will a person pay for parking at the **shade** for 18 hours 40 minutes? (2)

2.2.3 Mr Wayne's sister parked her car at **P5 long stay**, she states that the difference between 0 to 5 days parking and weekly parking per day cost on the same parking is R83.60.

Verify her statement by showing all calculations. (4)

2.2.4 Name the graph that can best represent parking tariffs. (2)

2.2.5 Determine the probability of Mr Wayne paying more than R90.00, if he parked in the parkade. Give your answer in simplified form. (3)

**[30]**

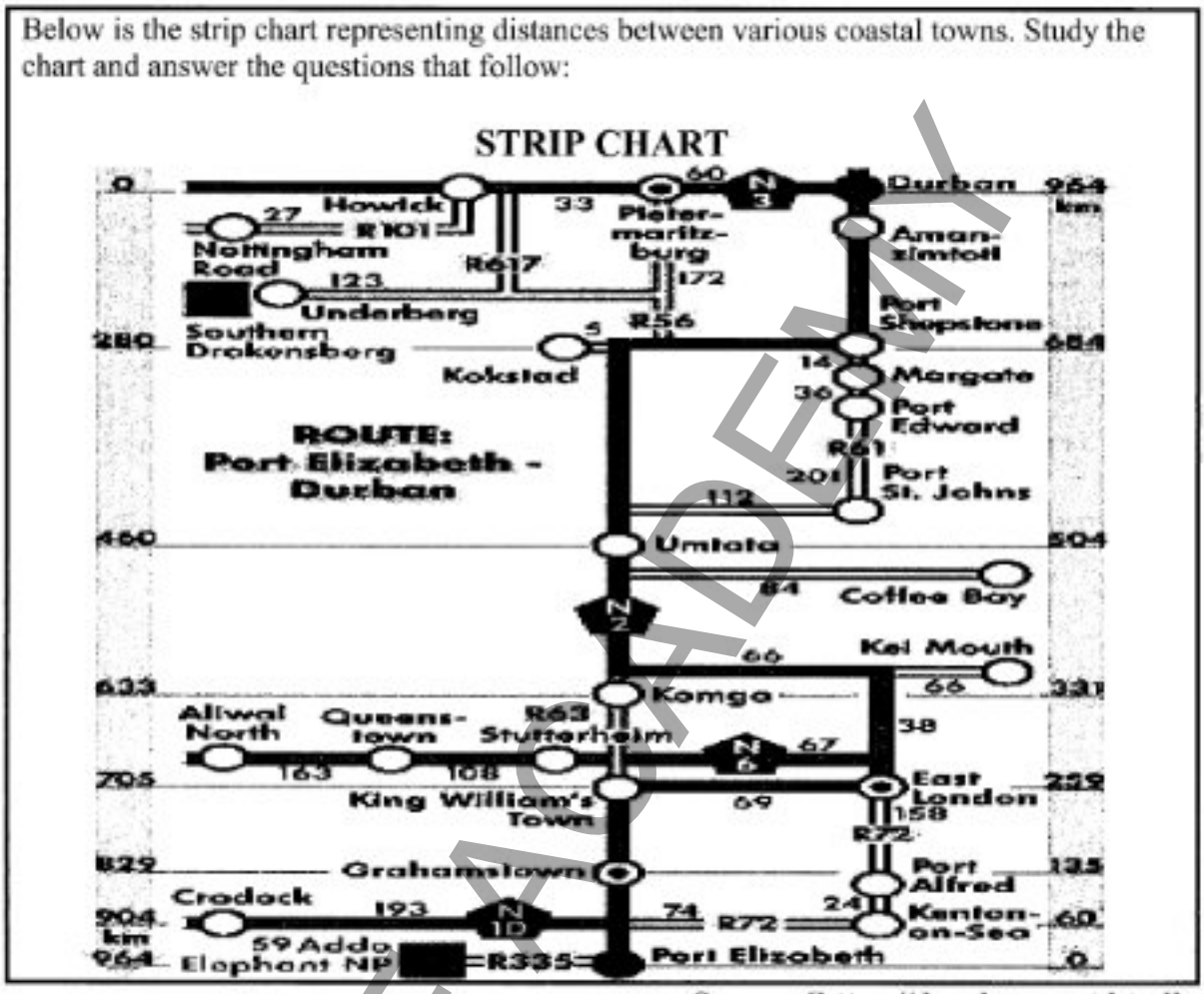
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## QUESTION 3

3.1 Below is the strip chart representing distances between various coastal towns. Study the chart and answer the questions that follow:




Source: [https://docplayer.net.html]

3.1.1 Calculate the total distance between Durban and Nottingham Road? (2)

3.1.2 A traveller would take approximately 120min to drive from Durban to Nottingham road with normal traffic flow. Show with calculations the speed he will be travelling at.
You may use the following formula: (4)

$$\text{Average Speed} = \frac{\textit{Total Distance}}{\textit{Driving Time}}$$

3.1.3 Calculate the distance between Kokstad and Umtata, then determine the scale used to draw the strip chart. (4)

3.1.4 Use the scale calculated in 3.1.3 to verify whether the distance given on the chart between Komga and Kei Mouth is correct. (4)

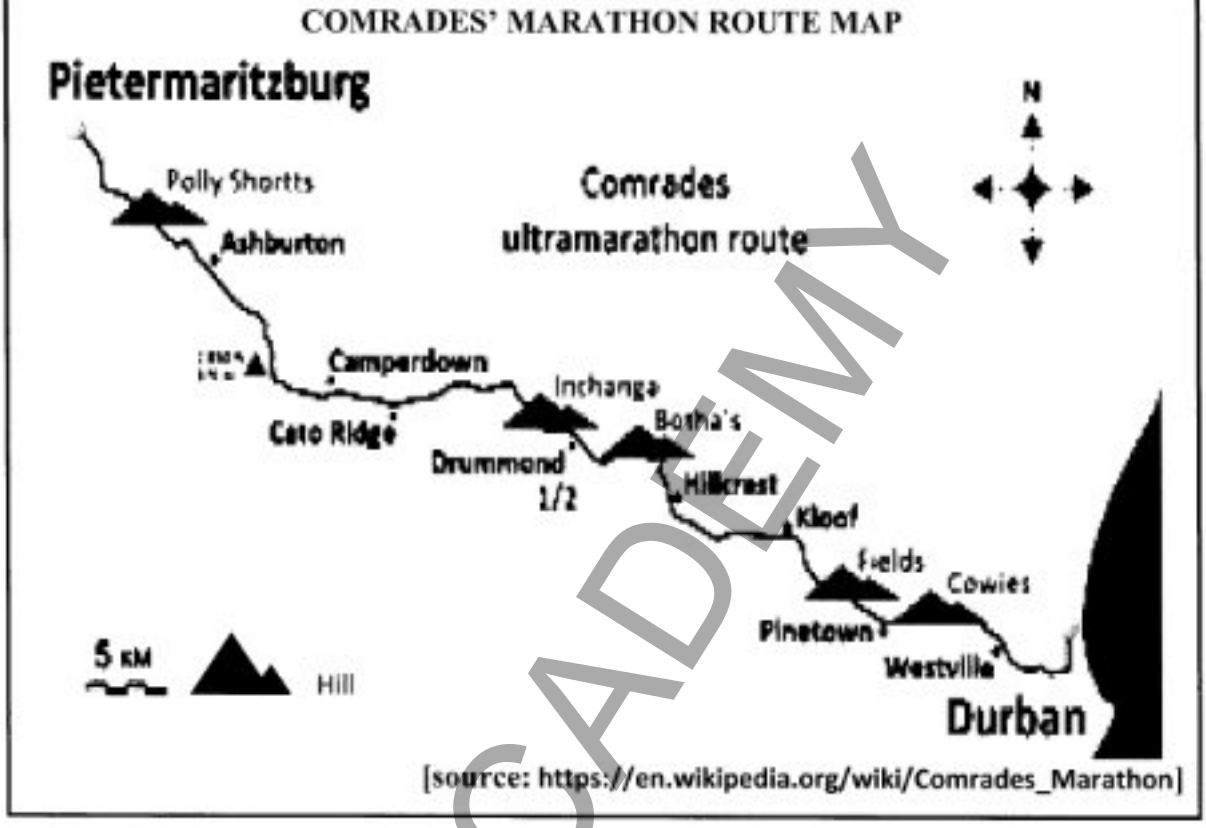
3.1.5 Give ONE possible reason that can cause a person to spend more time on the road between two towns mentioned in 3.1.1. (2)

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3.2 Comrade Marathon is the most popular race that is ran by thousands of athletes. The route starting point alternate each year between Durban and Pietermaritzburg.




Study the comrade marathon map above and answer the questions that follow.

3.2.1 What is the general direction of Durban from Pietermaritzburg? (2)

3.2.2 The marathon distance is 89 km (55,3 miles) and start at 05:30 and finishes at 17:30.

a) Determine (rounded to TWO decimal place) the conversion factor for the distance marathon in the form of **1 mile :…km** (2)

b) Calculate the duration of the comrade marathon in hours. (2)

3.2.3 The map denotes a down run of the comrade marathon. Explain why the race is called a down run. (2)

3.2.4 The 2022 marathon have 11 000 athletes registered and 55% are males. Determine the number of male athletes registered to participate on the marathon (2)

3.2.5 The Drummond cut-off time is at 11:30, Give ONE possible reason for cut-off time. (2)

3.2.6 Calculate the distance in kilometres between Cowie's hill and Botha's hill (2)

**[30]**

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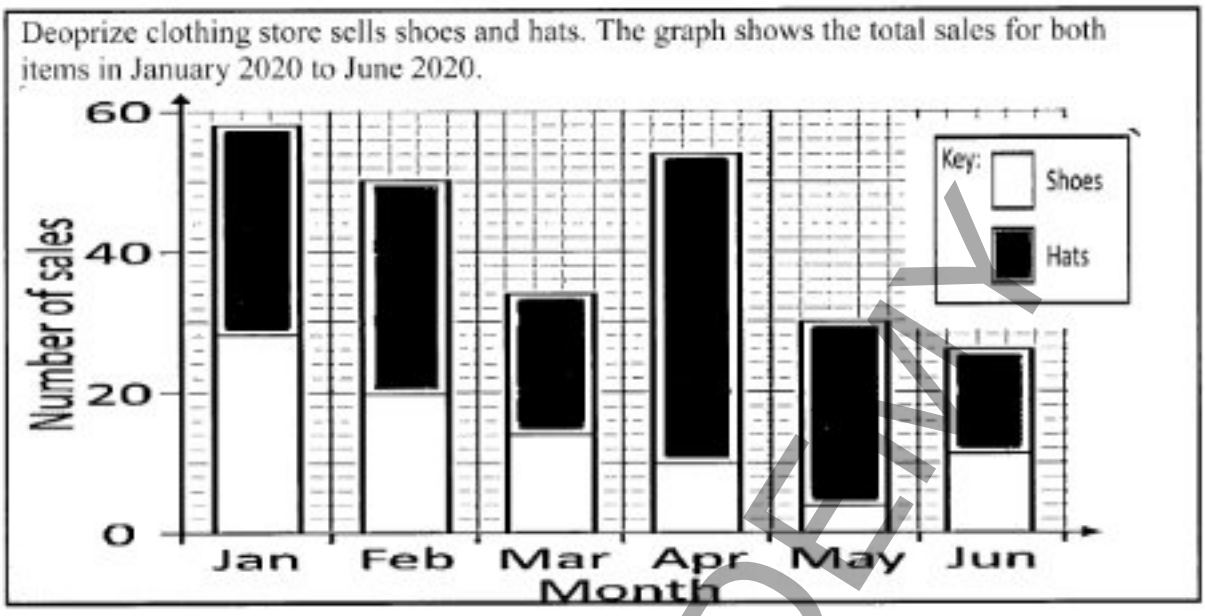
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## QUESTION 4

4.1 Deoprize clothing store sells shoes and hats. The graph shows the total sales for both items in January 2020 to June 2020.




Study the graph above and answer the questions that follow.

4.1.1 Identify the type of the graph and give ONE element that is missing on the graph. (2)

4.1.2 Determine the highest number of hats sold per month. (2)

4.1.3 Calculate the total number of shoes sold in the given period. (2)

4.2 Deoprize clothing collected the data prises from Google shopping list from different outlets. TABLE 2 below shows the listed prices. Study TABLE 2 below to answer the questions that follow.

**Table 2: Prices of Shoes and hats in Rands (ALL prices Excludes 15% VAT)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hats(R)** | 49,90 | 89,90 | 69,90 | 39,20 | 409 | 52 | 55 | 92 | 52 | 99 | 39 |
| **Shoes(R)** | 350 | 999 | 450 | 280 | 350 | 720 | 192 | 800 | 450 | 220 | 280 |

4.2.1 Give the type of data collection method used to obtain the prices of the items. (2)

4.2.2 Calculate the mean price of the shoes. (3)

4.2.3 Deoprize manager indicates that the median VAT of the median hat price is R7.80. Verify this statement. (4)

4.2.4 Determine the range of the prices for the shoes. (2)

4.2.5 Which measure of central tendency between the mean and the mode will the best to describe the prices of the items. Give a reason for your choice. (3)

**[20]**

**TOTAL MARKS:100**

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## ADDENDUM

## JUNE 2022

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This addendum consists of 3 pages with 2 annexures.

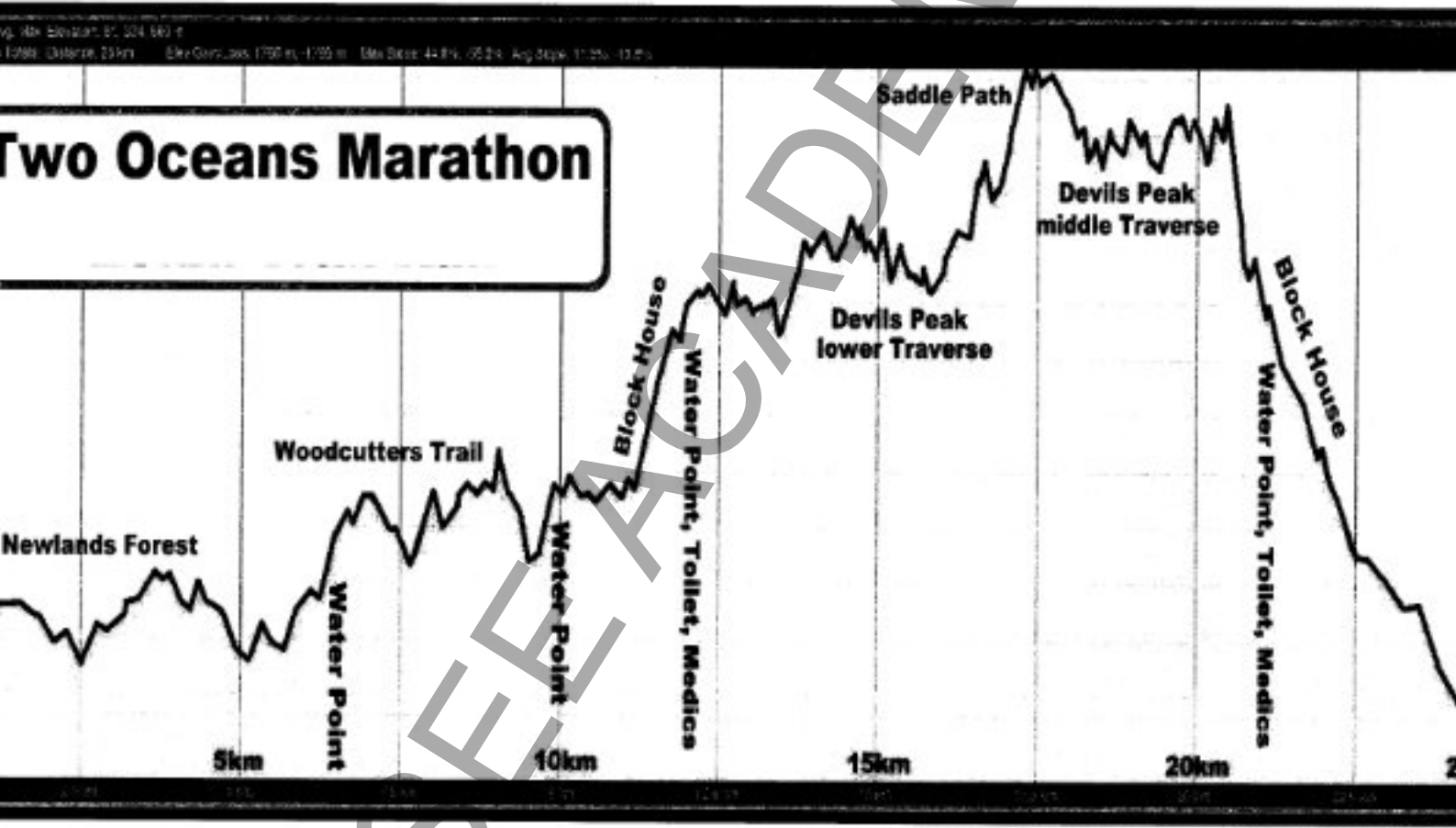
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RE A

3

TWO OCEANS MARATHON ELEVATION MAP




[source : https://www.twooceansmarathon

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**ANNEXURE B**
**Question 2.2**




[source: http://cape-townairport.co.za/]

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