



Province of the
EASTERN CAPE
EDUCATION

MATHEMATICAL LITERACY P1

COMMON TEST

JUNE 2014

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MARKS: 100

TIME: 2 Hours

This question paper consists of 8 pages and 1 annexure.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **FIVE** questions. Answer **ALL** the questions.
2. Answer Question 3.1.4 on ANNEXURE A. Write your name in the space provided and hand in the ANNEXURE with your answer book.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Start **EACH** question on a **NEW** page.
5. An approved calculator (non-programmable and non-graphical) may be used.
6. **ALL** the calculations must be clearly shown.
7. **ALL** the final answers must be rounded off to **TWO** decimal places, unless stated otherwise.
8. Units of measurement must be indicated where applicable.
9. Write neatly and legibly.

QUESTION 1

1. Calculate the following:

- 1.1 Jane and Mandy received a total of R2 600 for the services that they rendered. Jane worked for 12 hours and Mandy worked for 18 hours.
- (a) Write down Jane's to Mandy's (Jane's:Mandy's) hours as a ratio in simplest form. (2)
- (b) Use the ratio calculated above to determine the amount in Rands that Mandy received. (3)
- 1.2 Convert 8 km to centimetres.
Hint: 1km = 1 000m and 1m = 100cm (2)
- 1.3 A cellphone company charges R2,85 per minute to make a call. Calculate how much will be paid for a 12 minutes call. (2)
- 1.4 The cost of a queen size bed is R7 999 with 14% VAT (value added tax) included. Calculate VAT exclusive price of the bed. (3)
- 1.5 Determine how many British pounds can be bought with R8 550 if the exchange rate is £ = R16,20. Round off your answer correct to two decimal places. (3)
- 1.6 245 grade 12 learners attended a career exhibition workshop. They will be transported by taxis. A company offers to transport these learners and charges R120 per taxi. Each taxi can carry a maximum of 15 learners. How many taxis are needed to transport learners **and** how much will the taxi company earn? (5)

[20]

QUESTION 2

- 2.1 Thembi is a manager in a company that manufactures tyres. She is 45 years old. Below is her income and expenditure statement for January.

Table 1: Thembi's income and expenditure statement

Gross Income	
Salary	R23 000
Expenses	
Transport	R1 500
Savings	R3 000
Rent	R3 500
Food (groceries)	R3 500
Entertainment	R550
Clothes	R800
Contract cellphone	R389
TOTAL	R13 239

- 2.1.1 Calculate Thembi's transport expenses as a percentage of the total expenses. (2)
- 2.1.2 Due to the petrol price increase, Thembi's transport expenses increased by 3%. Determine Thembi's new transport expenses. (2)
- 2.1.3 Calculate Thembi's gross annual salary.
NOTE: She also receives a birthday bonus / 13th cheque which is equal to the monthly salary (2)
- 2.1.4 Calculate Thembi's monthly tax using the tax table for 2014/ 2015 tax year below. **[Ignore the 13th cheque in this calculation]** (6)

Table 2: Tax table for individuals 2014/2015

Taxable income (R)	Rates of tax
0 – 174 550	18% of each R1
174 551 – 272 700	31 419 + 25% of the amount above 174 550
272 701 – 377 450	55 957 + 30% of the amount above 272 700
377 451 – 528 100	87 832 + 35% of the amount above 377 450
528 001 – 673 100	140 074 + 38% of the amount above 528 100
673 101 and above	195 212 + 40% of the amount above 673 100
TAX REBATES FOR INDIVIDUALS	
Primary rebate	R12 726
Secondary rebate (for persons 65 years and older)	R7 110
Tertiary rebate (for persons 75 years and older)	R2 367
TAX THRESHOLDS	
Persons under 65 years	R70 700
Persons 65 years and older	R110 200
Persons 75 years and older	R123 350

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2.2 Thembi requires the following ingredients to make instant custard tarts.

2 cups milk,
2 tablespoons melted butter,
 $\frac{2}{5}$ cups lemon juice and
 $\frac{4}{5}$ cups condensed milk.

The above items will be mixed in a plastic measuring jug.

If the measuring jug has the capacity of 850 ml , will it be enough to hold these liquid ingredients? Use the following table.

Table 3: Measurement table

Measuring size	1 cup	$\frac{1}{2}$ cup	1 tablespoon	1 teaspoon
Measurement	250 ml	125 ml	15 ml	5 ml

(5)
[17]

QUESTION 3

- 3.1 Vuyo and his friends live in Newcastle. They are invited to attend a wedding ceremony for Mary and Harry. **Phase one** of the ceremony will take place in Ladysmith and **phase two** will take place in Durban the following weekend. They make car rental quotations from two different service providers, Billy's car hire and Joe's car hire. Billy's car hire charges a basic fee of R200 and R2, 00 per kilometre travelled or part thereof. Joe's car hire charges R2, 50 per kilometre travelled or part that of. The distance from Newcastle to Ladysmith is 100km and from Newcastle to Durban is 400km.

Table 4: Information on distance and cost for 2 companies.

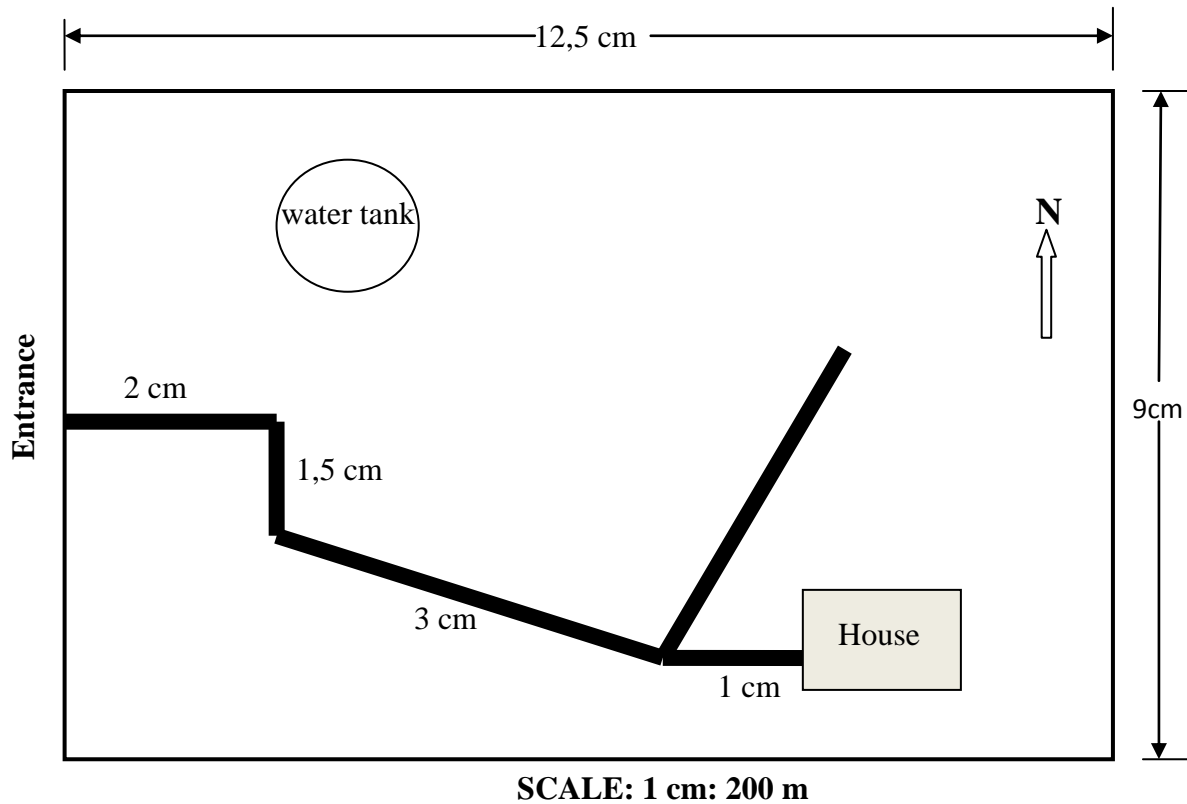
Distance in km	0	50	100	150	...	400	500	600	700	800
Billy's car hire cost in Rands	200	300	400	500	...	A	1200	1400	1600	1800
Joe's car hire cost in Rands	0	125	250	375	...	B	1250	1500	1750	2000

- 3.1.1 Fill in the missing values of A and B. (4)
- 3.1.2 Write down an equation to calculate Billy's car hire cost. (2)
- 3.1.3 Write down an equation to calculate Joe's car hire cost. (2)
- 3.1.4 Use ANNEXURE A to draw TWO line graphs representing Billy's car hire and Joe's car hire and label them accordingly. (5)
- 3.1.5 After how many kilometres will the cost be equal for both companies? (2)
- 3.1.6 Refer to the table or graphs to answer the following questions
The distance between Newcastle and Durban is 400 km.
How much will Vuyo and friends pay for the **return trip** if they hire a car to and from Durban using Joe's car hire company including fuel costs?
NOTE: R100 of fuel allows you to travel 72 km. (6)
- 3.2 Billy's car hire company has a fleet (the company owns 30 cars) of 30 cars for hire, 15 white, 5 red, 6 grey and the rest of the cars are blue.
- (a) What is the probability of hiring a blue car. Express your answer as a percentage. (3)
- (b) What is the probability of hiring a white car? (2)

[26]

QUESTION 4

The sketch given below represents the map of Kangaroo farm. The scale of the map is 1 cm : 200 m. Study the map and answer the questions that follow.



- 4.1 (a) Use the scale to determine the **length** of the farm in metres. (2)
 (b) Use the scale to determine the **breadth** of the farm in metres. (2)
- 4.2 Calculate the area of the entire farm in square kilometres (km^2).
Formula: Area = length \times breadth (3)
- 4.3 Calculate the distance (in kilometres) from the entrance to the house.
Hint: 1 km: 1 000 m (2)
- 4.4 Give the general direction to the water tank from the house? (2)
- 4.5 Calculate the volume (**in m^3**) of the water tank if it has a diameter of 600cm and a height of 40m. (4)
Formula: Volume of a cylinder = $\pi r^2 h$ use $\pi = 3,142$

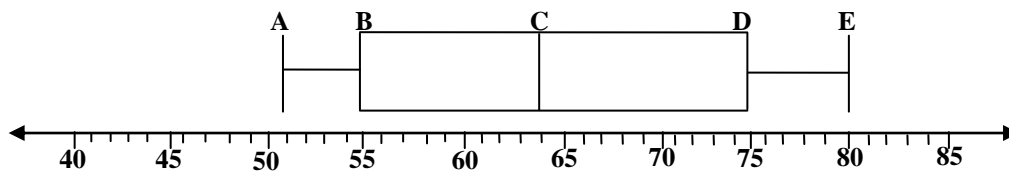
[15]

QUESTION 5

Ms Manana is a Mathematical Literacy teacher at Fundakahle High school. Her learners wrote a test out of hundred and obtained the following marks. Study the given data and answer the questions that follow.

Learners / Students' marks									
63	46	55	59	56	69	41	50	52	55
40	85	83	57	49	65	60	68	70	58

- 5.1 Calculate the five number summary (minimum, maximum, Quartile 1, Quartile 2 and Quartile 3) for the above data. (6)
- 5.2 Calculate the mean (average) of the above data. (2)
- 5.3 Determine the modal mark. (2)
- 5.4 Calculate the range of the marks. (2)
- 5.5 Calculate the interquartile range of the marks. (3)
- 5.6 Below is a box and whisker plot for Tourism test marks of the learners at Fundakahle High School.



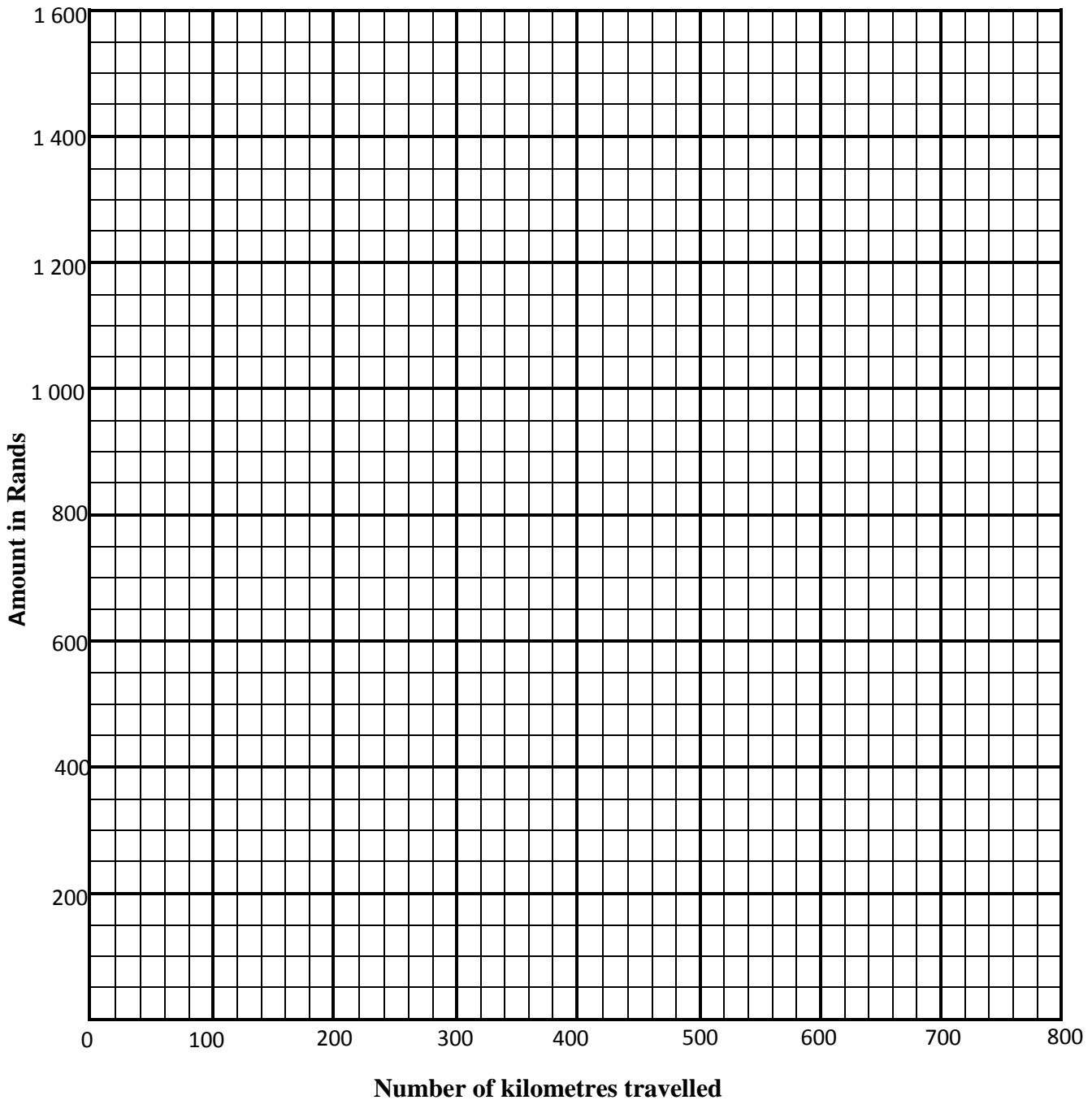
- 5.6.1 Give the values for each of the letters A, B, C, D and E (5)
- 5.6.2 Calculate the range for Tourism test marks. (2)

[22]**TOTAL MARKS: [100]**

ANNEXURE A: QUESTION 3.1.4

NAME _____

Graph showing Billy's and Joe's car rental costs



PLEASE TEAR ON DOTTED LINE