



Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2017**

**MATHEMATICAL LITERACY P2**

**MARKS: 100**

**TIME: 2 hours**



---

This question paper consists of 7 pages including an addendum of 4 pages.

---

**INSTRUCTIONS AND INFORMATION**

Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ADDENDUM with ANNEXURES for the following questions:  
  
ANNEXURE A for QUESTION 4.1  
ANNEXURE B for QUESTION 4.2  
ANNEXURE C for QUESTION 4.3
3. Number the questions 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, unless stated otherwise.
6. Show ALL calculations clearly.
7. Round off ALL final answers appropriately accordingly to the given context, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT drawn to scale, unless stated otherwise.
10. Write neatly and legibly.

**QUESTION 1**

Sipho has a car washing business in the Ziphunzana area. They charge R30 per car and R40 per microbus. They wash on average 10 cars and 5 microbuses per day from Monday to Friday and on Saturdays and Sundays they wash 60% more cars and 30% more microbuses.

- 1.1 If they wash both cars and microbuses from Monday to Friday, calculate the probability that they will wash a car. (3)
- 1.2 Sipho claims that if they wash both cars and microbuses from Monday to Sunday, they will be able to receive more than R4 000. With calculations, show whether his claim is valid or not. (10)
- 1.3 Sipho and his employees use three 25-litres containers of water for a car and four 25-litres containers of water for a microbus. How many litres of water do they use in 7 days? (6)
- 1.4 Use the table below to answer the question.

**TABLE 1: Water tariff charges per month for Ziphunzana in 2014–2015**

<b>Tariff Summary</b>	<b>Tariff R/kl 2014/15 (without VAT)</b>
0 – 6 kℓ	R8,66
7 – 15 kℓ	R10,02
16 – 30 kℓ	R12,28
31 – 45 kℓ	R15,25
46 – 60 kℓ	R16,70

**NOTE:**

1 000 litres = 1 kilolitre

VAT = 14%

Calculate how much Sipho will pay for water per month including VAT.

**NOTE:** Assume there are 4 weeks in a month. (8)

- 1.5 Give a possible reason why they wash more cars on Saturdays and Sundays. (2)
- [29]**

**QUESTION 2**

2.1 Use TABLE 2 below showing different options with premiums paid and benefits of an insurance company.

**TABLE 2**

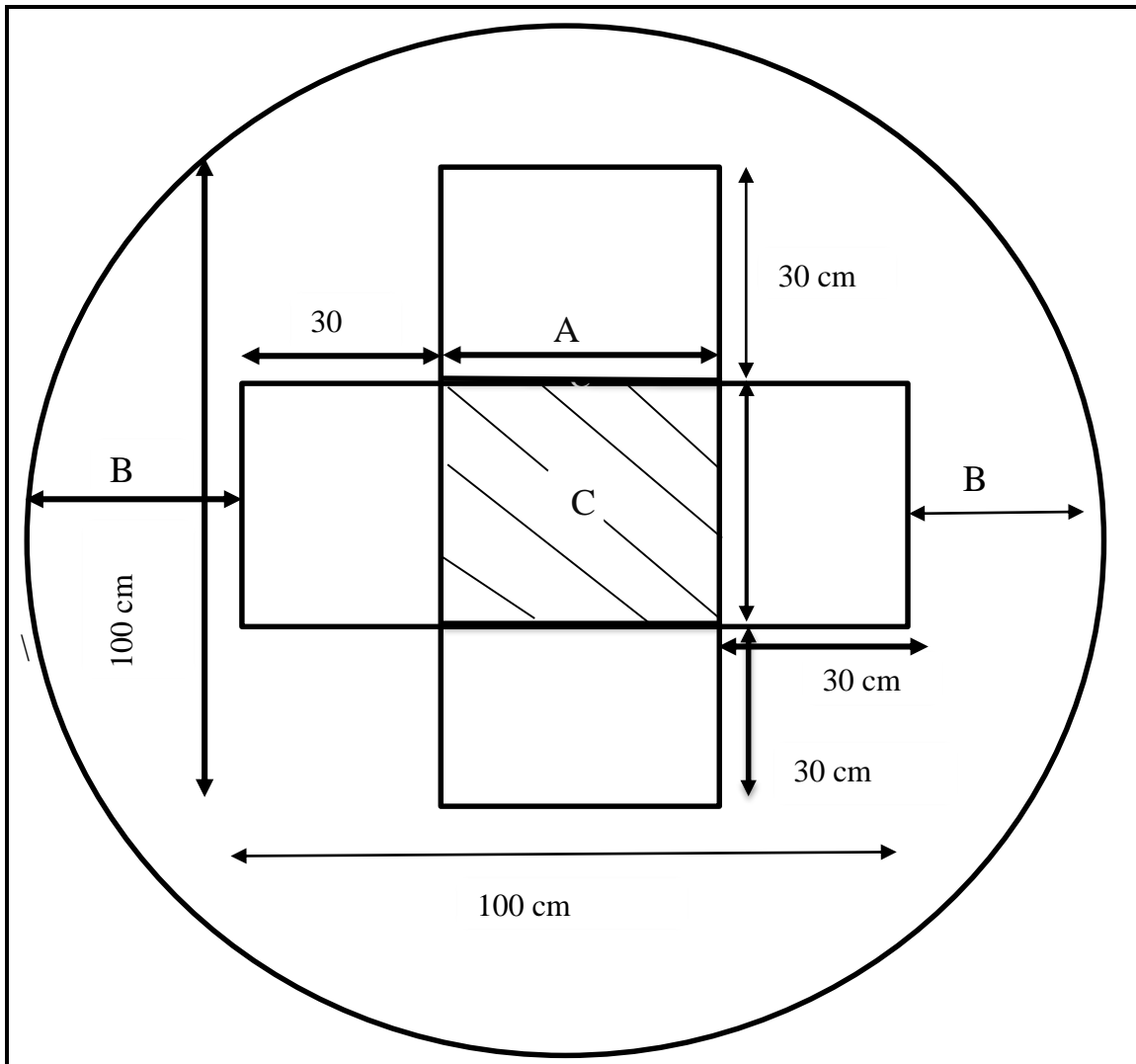
<b>Options with premiums to be paid and benefits of an insurance company</b>								
	<b>Option 1</b>		<b>Option 2</b>		<b>Option 3</b>		<b>Option 4</b>	
	Benefit	Premium	Benefit	Premium	Benefit	Premium	Benefit	Premium
Main member	R10 000	R45	R15 000	R65	R20 000	R82	R30 000	R110
Main member and children	R10 000	R63	R15 000	R91	R20 000	R113	R30 000	R140
Main member and spouse	R10 000	R76	R15 000	R107	R20 000	R135	R30 000	R188
Main member, spouse and children	R10 000	91	R15 000	R125	R20 000	R163	R30 000	R212

**NOTE:**

- **Benefits in the table represent money paid out in the event of death for a person 15 years and older**
- **Benefits for those younger than 15 years are 75% of the amounts indicated in the table.**
- **Premium is the amount paid monthly to be able to get the death benefit.**

- 2.1.1 What will be the premium paid by a member with a spouse and children to get the benefit of R30 000? (2)
- 2.1.2 Mary claims that the percentage increase for the premium paid in Option 1 to Option 4 for a member and spouse is more than 100%. Verify, with the necessary calculations, whether Mary's statement is valid or not. (4)
- 2.1.3 Give a reason why less money is paid out for a 5-year-old than for a 15-year-old. (2)

2.2 Mr May has cut glass into shapes from a circular piece of glass as shown below.



**Diameter of the circular piece of glass = 150 cm**

2.2.1 Write the distance of B to the distance of A as a ratio. (6)

2.2.2 Glass is sold at R15 per square metre excluding VAT. With the necessary calculations, show that the cost of unused glass (including VAT) from the circular piece of glass to cut the cross shaped piece of glass, is less than R20.

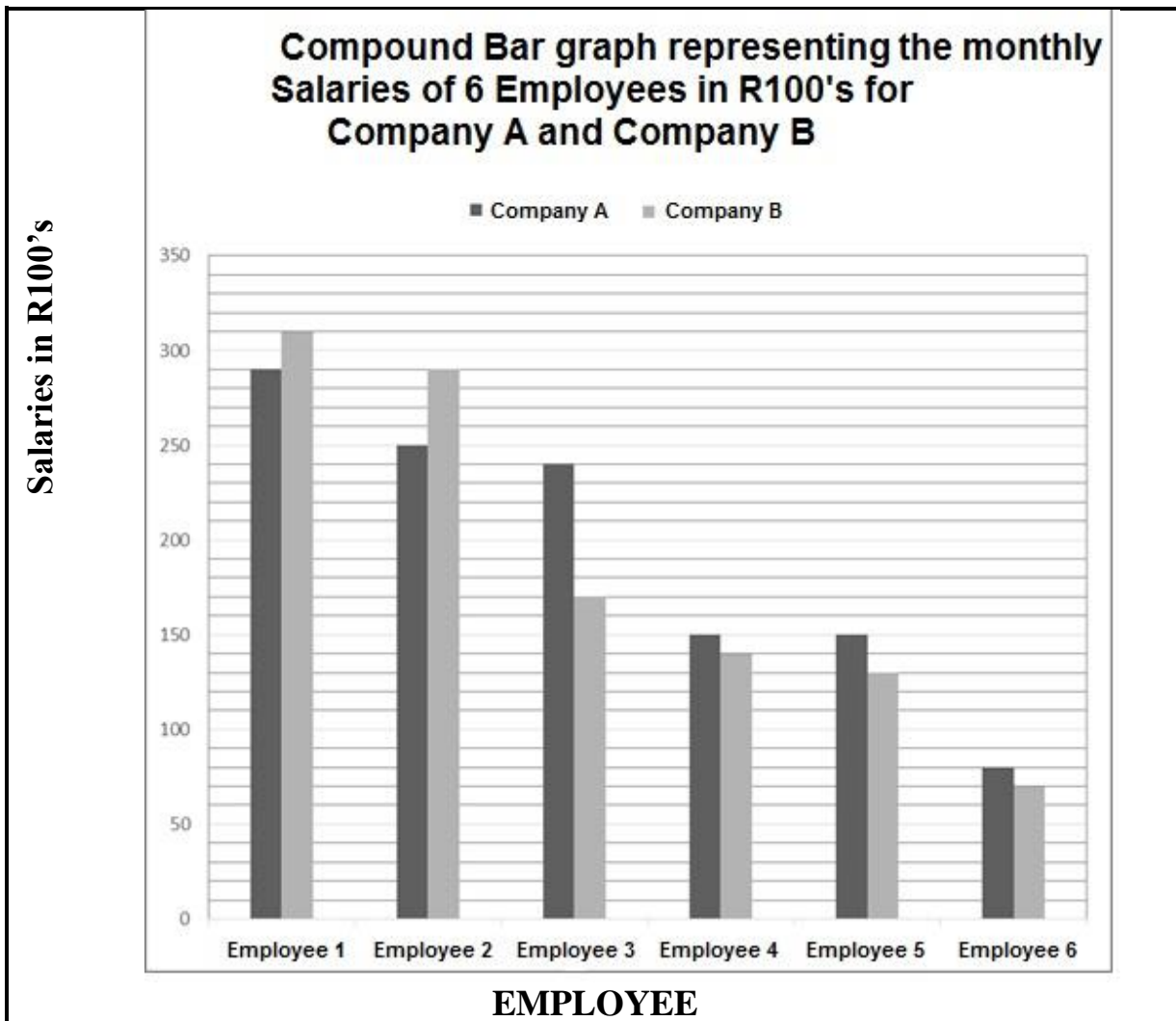
You may use the following formulae:

- **Area of cross shaped part = Area of bigger rectangle + 2 × Area of smaller rectangles**
- **Area of a rectangle = length × width**
- **Area of a circle =  $\pi \times r^2$ ; where  $\pi = 3,142$**

(10)  
[24]

### QUESTION 3

A compound bar graph below represents salaries of six employees in R100's for two companies. Use the graph to answer the questions below.



- 3.1 Moesha claims that the mean salary of Company A, is R1 000 more than the mean salary of Company B. Verify, with calculations, whether her statement is valid or not. (6)
- 3.2 What is the modal salary of Company B? (2)
- 3.3 Thato, a worker at Company A receives the modal salary. He lends 15% of one month's salary to a friend to be paid back over two years. The friend must pay back the money with interest at an interest rate of 5% compounded annually. How much will he receive after two years? (6)
- 3.4 What is the probability of randomly choosing an employee who earns a salary of less than R8 000 at Company A? (2)
- [16]**

**QUESTION 4**

4.1 The table in ANNEXURE A shows the mid-year population estimates for South Africa by population group and gender in 2014. Answer the questions below that are based on the table in ANNEXURE A.

- 4.1.1 Calculate the missing values **A** and **B** respectively in the table. (4)
- 4.1.2 Which population group has fewer females than males? (2)
- 4.1.3 Write the total number of white males in words. (2)

4.2 A seating plan of the Canyon Theatre is given in ANNEXURE B. Answer the questions below based on the seating plan.

- 4.2.1 What is the difference in the number of seats between the left-hand side and the right-hand side of the theatre? (4)
- 4.2.2 Determine the seats for the handicapped as a percentage of the total number of seats on the right-hand side of the theatre. Your answer should be rounded off to two decimal places. (3)

4.3 An extract of a map of the WILD COAST is given in ANNEXURE C. Answer the following questions that are based on the map.

4.3.1 Anda travels on the N2 route between Butterworth and Mount Frere. She claims that if she travels at an average speed of 105 kilometres per hour and leaves Butterworth at 7:00 am, she will be able to be on time in Mount Frere for a meeting that starts at 9:30 am. With the necessary calculations, show whether her claim is valid or not. Give your answer in hours and minutes.

You may use the following formula:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}} \tag{8}$$

- 4.3.2 Anda works for a company which pays her a rate of R2,82 per kilometre for transport cost. This is a rate after an increment of 6,8%. How much did she get for a return trip between Butterworth and Mount Frere before the increment? Express your answer to the nearest rand. (6)
- 4.3.3 Which other roads on the map except for the N2 can be used to travel on? (2)

**[31]**

**TOTAL: 100**







Province of the  
**EASTERN CAPE**  
EDUCATION

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 11**

**NOVEMBER 2017**

**MATHEMATICAL LITERACY P2  
ADDENDUM**

**MARKS: 100**

**TIME: 2 hours**



---

This addendum consists of 4 pages with 3 annexures.

---

## ANNEXURE A for QUESTION 4.1

Population group	Male		Female		Total	
	Number	% of male population	Number	% of female population	Number	% of total population
<b>African</b>	21 168 700	80,3	22 165 000	<b>B</b>	43 333 700	80,2
<b>Coloured</b>	2 305 800	8,7	2 465 700	8,9	4 771 500	8,8
<b>Indian/ Asian</b>	677 000	2,6	664 900	2,4	1 341 900	2,5
<b>White</b>	2 214 400	8,4	2 340 400	8,5	4 554 800	8,4
<b>Total</b>	<b>A</b>	<b>100,0</b>	<b>27 636 000</b>	<b>100,0</b>	<b>54 001 900</b>	<b>100,0</b>

ANNEXURE B for QUESTION 4.2

# Canyon Theatre Seating Chart

STAGE

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	R	S	T	U	V	W	
		CENTER																		RIGHT			
1	LEFT					1E	1F	1G	1H	1I	1J	1K	1L	1M	1N	1P	1R	1S	1U	1V	1W	1	
2					2E	2F	2G	2H	2I	2J	2K	2L	2M	2N	2P	2R	2S	2U	2V			2	
3		3B	3C	3D	3E	3F	3G	3H	3I	3J	3K	3L	3M	3N	3P	3R	3S	3U	3V			3	
4		4A	4B	4C	4D	4E	4F	4G	4H	4I	4J	4K	4L	4M	4N	4P	4R	4S	4U	4V	4W	4	
5		5A	5B	5C	5D	5E	5F	5G	5H	5I	5J	5K	5L	5M	5N	5P	5R	5S	5T	5U	5V	5W	5
6		6A	6B	6C	6D	6E	6F	6G	6H	6I	6J	6K	6L	6M	6N	6P	6R	6S	6U	6V	6W	6	
7		7A	7B	7C	7D	7E	7F	7G	7H	7I	7J	7K	7L	7M	7N	7P	7R	7S	7T	7U	7V	7W	7
8		8A	8B	8C	8D	8E	8F	8G	8H	8I	8J	8K	8L	8M	8N	8P	8R	8S	8U	8V	8W	8	
9		9A	9B	9C	9D	9E	9F	9G	9H	9I	9J	9K	9L	9M	9N	9P	9R	9S	9T	9U	9V	9W	9
10		10B	10C	10D	10E	10F	10G	10H	10I	10J	10K	10L	10M	10N	10P	10R	10S	10U	10V			10	
11		11A	11B	11C	11D	11E	11F	11G	11H	11I	11J	11K	11L	11M	11N	11P	11R	11S	11T	11U	11V	11W	11
12		12A	12B	12C	12D	12E	12F	12G	12H	12I	12J	12K	12L	12M	12N	12P	12R	12S	12U	12V			12
13		13A	13B	13C	13D	13E	13F	13H	13I	13J	13K	13L	13M	13N	13P	13R	13S	13T	13U	13V			13
14		14A	14B	14C	14D	14E	14F	14H	14I	14J	14K	14L	14M	14N	14P	14U	14V			14			
15		15A	15B	15C	15D	15E	15F											15U	15V			15	
16		16B	16C	16D	16E																	16	

Seats for the handicapped

ANNEXURE C for QUESTION 4.3

