



Province of the  
**EASTERN CAPE**  
EDUCATION

---

Steve Vukile Tshwete Education Complex • Zone 6 Zwelitsha 5608 • Private Bag X0032 • Bhisho 5605  
REPUBLIC OF SOUTH AFRICA

---

**CHIEF DIRECTORATE – CURRICULUM MANAGEMENT**

**GRADE 12 LEARNER SUPPORT  
PROGRAMME**

**REVISION AND REMEDIAL TEACHING  
INSTRUMENT:  
QUESTIONS AND ANSWERS**

**SUBJECT: MATHEMATICAL LITERACY – SECOND PAPER**

**June 2009**

**This document consists of 9 pages.**

***Strictly not for test/examination purposes***

**INSTRUCTIONS AND INFORMATION**

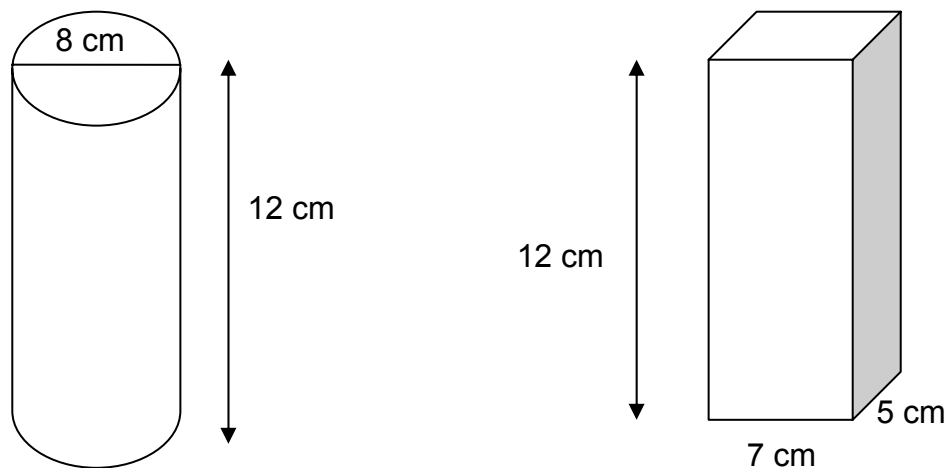
1. This question paper consists of FIVE questions. Answer ALL the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. The graph for QUESTION 2 can be found on Annexure A at the end of this paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. ALL calculations and steps must be shown clearly.
6. ALL the final answers must be rounded off to TWO decimal places, unless stated otherwise. Do NOT round off until you get to the answer.
7. Start EACH question on a NEW page.
8. Write neatly and legibly.

## QUESTION 1

- 1.1 The under 15 soccer team at your school wants to raise funds to attend some of the 2010 FIFA World Cup matches as a team. They decided to make and sell candles to raise the necessary funds.



They have TWO options to choose from: a cylindrical pillar candle or a rectangular pillar candle. The dimensions (measurements) for the TWO types of candles are as follows:



The following formulas may be used in this question:

$$V = \pi r^2 h \quad \text{and} \quad V = \text{length} \times \text{breadth} \times \text{height} (l b h).$$

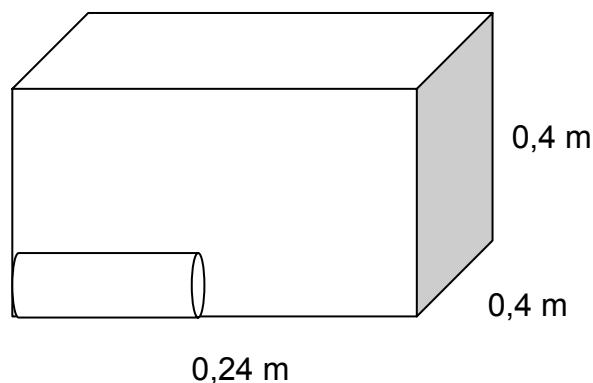
(Use  $\pi = 3,14$ ) Note:  $1\,000\text{ cm}^3 = 1\text{ litre}$

- 1.1.1 Which of the TWO candles will have the bigger volume?  
[Show ALL the necessary calculations] (6)
- 1.1.2 The school decides to make the cylindrical candles and to wrap them completely with printed plastic wrappings.

Calculate the area of the plastic paper needed to wrap ONE candle.  
(Give your answer in  $\text{m}^2$ )

**NB:** Use the formula: Surface Area =  $2\pi r h + 2\pi r^2$  (Use  $\pi = 3,14$ ) (4)

- 1.1.3 The school would like to make 1 000 cylindrical candles. Calculate how many litres of wax they would need to make the 1 000 candles. (4)
- 1.1.4 How much plastic wrapping will be needed for wrapping the 1 000 candles? [Assume there will be no wastage] (4)
- 1.1.5 Wax can be purchased at R2,50 per litre at the hardware store and the plastic wrappings at R3,50 per square metre, both excluding VAT. The store gives a 15% discount to schools. Calculate what the school will pay if they buy enough wax and plastic wrappings for 1 000 candles. (Your final answer must include VAT of 14%) (13)
- 1.2 For delivery, the candles are packaged in rectangular boxes with the following measurements:



- 1.2.1 To prevent breakage, the candles must lie flat in the box as shown in the sketch. Show by calculations that 50 candles can be packed in the box with the measurements given. (4)
- 1.2.2 How many boxes are needed for packing 1 000 candles? (2)
- 1.2.3 The school decides to sell each candle at R25,00. How much profit will they make if they sell ALL the candles? (4)

**[41]**

**QUESTION 2**

Nomsa is a fruit seller who sells only apples and oranges. Every day she has to sell a minimum of 10 apples and 20 oranges. She cannot sell more than 50 fruit of the two types combined in ONE day. An apple costs 50c and an orange costs 80c. Everyday she can spend only R30 to buy fruit. She makes a profit of 15c on an apple and 20c on an orange.

Let the x-axis (or horizontal axis) represent the number of apples sold daily.  
Let the y-axis (or vertical axis) represent the number of oranges sold daily.

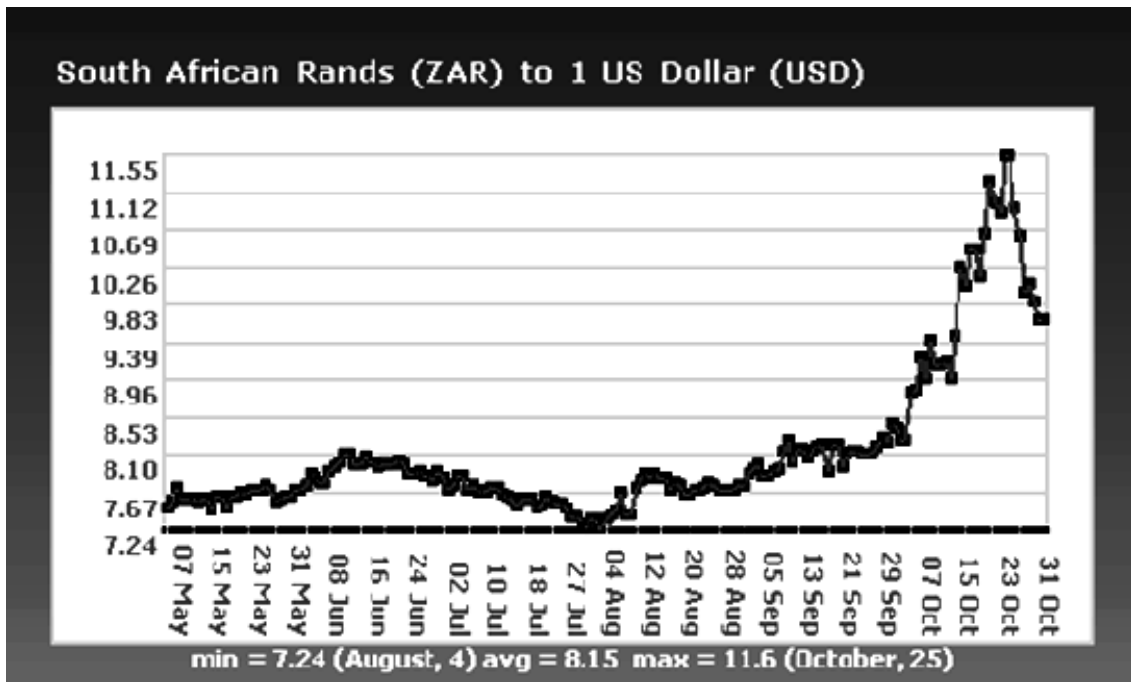
The graph in Appendix A represents the constraints given in the above situation.

- 2.1 Which of the straight lines (A – D) in the graph describes each of the following:  
(Write only the letter depicting the graph)
- 2.1.1 The minimum number of apples Nomsa has to sell daily (1)
- 2.1.2 The minimum number of oranges Nomsa has to sell daily (1)
- 2.1.3 The maximum number of fruit Nomsa could sell daily (1)
- 2.1.4 The maximum number of oranges and apples Nomsa will be able to buy daily (1)
- 2.2 Determine, from the graph, the maximum number of oranges and apples Nomsa should sell in order to make the maximum profit. (3)
- 2.3 Let Nomsa's daily maximum profit be P. Write the equation for P in the form:  
 $P = \dots + \dots$  (2)
- 2.4 Calculate the maximum profit Nomsa could make from the sale of oranges and apples. (3)
- 2.5 Write TWO possible suggestions to Nomsa to make her business more profitable. (2)

**[14]**

## QUESTION 3

- 3.1 The following graph shows the exchange rate between the South African rand and the United States dollar (USD) from the beginning of May to the end of October 2008.

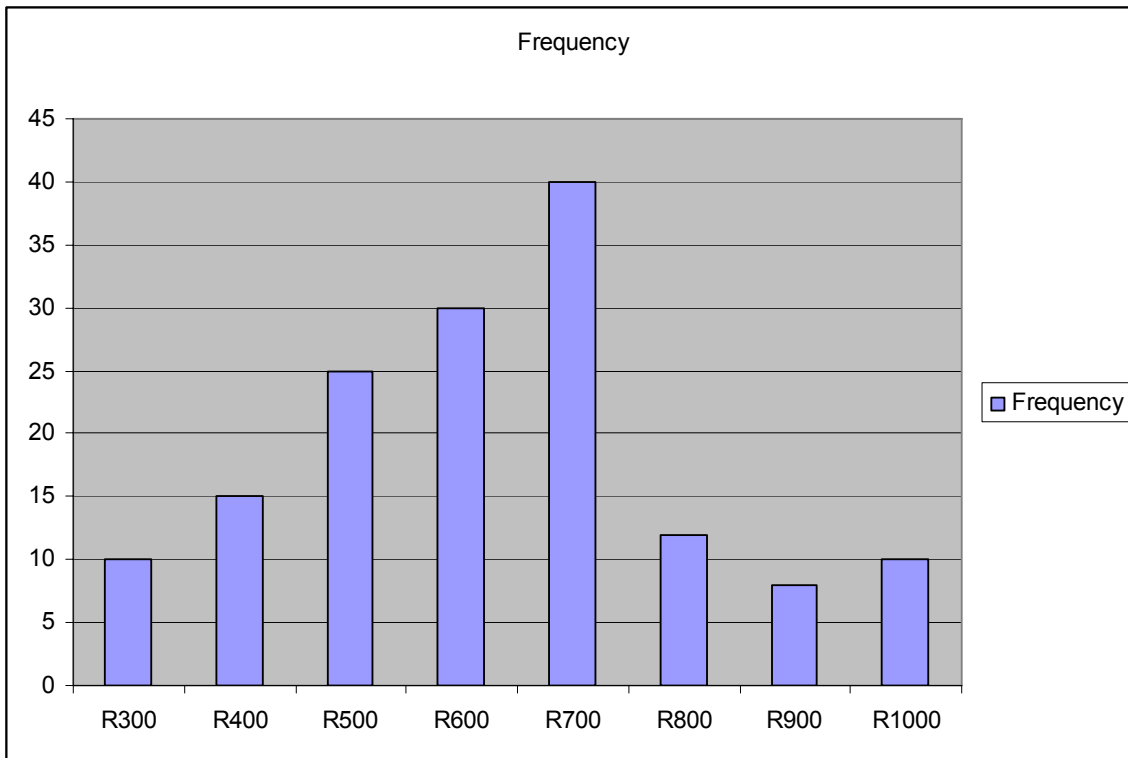


Noël, a South African, travels frequently to the United States on business. He always buys US dollars from his bank in South Africa.

- 3.1.1 In which month between May and October 2008 did Noël get the best exchange rate for his rand? (1)
- 3.1.2 From the beginning of May to the end of September, the graph appears to have little variation. What could be the reason for this? (2)
- 3.1.3 Noël bought US dollars (\$) from his bank during the week of the 29<sup>th</sup> September before he travelled to the US. The exchange rate for the day was R 8, 25 to the US dollar. He was given \$2 197 for R18 125 (excluding bank charges).  
Did Noël receive the right amount of US dollars for his rands? Explain. (3)
- 3.2 When he was about to return to South Africa on the 23<sup>rd</sup> October, he had \$500. He called his wife and asked for her advice on whether to change his dollars into rands. She advised him to change it into rand; but he did not.
- 3.2.1 How much rand would he have received for his \$500 at the exchange rate of R11,55 to the dollar? (2)
- 3.2.2 What good reason could Noël have given to his wife for not changing his US dollars to rands? (2)
- 3.2.3 Looking at the graph and considering the fact that Noël is a frequent traveller, what advice will you give Noël: whether to change his dollars to rands or not? (2)

**QUESTION 4**

An overseas travel agent contacted a local travel agent for information about the daily expenditure in ONE of the cities hosting the 2010 World Cup. The local travel agent conducted a survey to find out an estimate of daily expenditure in the city. The results of the survey are shown below in the form of a bar chart.



- 4.1 How many people suggested R600 as the estimated daily expense? (1)
- 4.2 How many people suggested R800 as the estimated daily expense? (2)
- 4.3 From the graph, determine the value of the mode of the distribution. (2)
- 4.4 How many people were involved in the survey? (3)
- 4.5 As a consultant for the local travel agent, which amount will you suggest to the overseas travel agent as the average daily expense in the city?  
[Show all your calculations] (4)

**[12]**

**QUESTION 5**

5.1 The table below shows Government expenditure budgeted for 2009/2010. Use the table to answer the questions that follow.

TOTAL SPENDING 2009/2010	2008/2009 Revised estimate (R billion)	2009/2010 Budget estimate (R billion)	% Average growth 2009/2010
Education	83,6	97,8	
Health	48,8	53,4	9,4%
Welfare and social security	73,1	80,3	9,8%
Housing and other social services	24,4	30,5	25,0%
Police, prisons and courts	47,0	51,6	9,7%
Sports, arts and culture	81,7		13,5%
Defence and intelligence	27,0	27,8	2,9%
Economic services (trade and industry and public enterprises)	71,8	81,1	13,0%
General administration	29,3	32,7	11,7%
Unallocated		2,5	
Non-interest expenditure	404,9	550,4	35%
Interest	55,7	57,0	2,3%
<b>TOTAL EXPENDITURE</b>	<b>630,4</b>	<b>864,2</b>	<b>37,1%</b>

5.1.1 How much money will the government spend on sport in 2009/2010 if it plans to increase its spending of 2008/2009 by 13,5%? (3)

5.1.2 Calculate the percentage increase in education from the 2008/2009 budget to the 2009/2010 budget. (4)

5.1.3 Comment on why you think the proposed budget for sport for the 2009/2010 year is so high in comparison with other sections. (1)

5.2 The ZBM municipality plans to construct new parking garages in preparation for the 2010 World Cup to accommodate visitors to the city.

Tariffs for the parking garages are as follows:

Time	Cost for Parking
08:00 – 20:00	R5,00 for the first hour or part thereof; thereafter R1,50 per half hour or part thereof.
20:00 – 08:00	R2,50 per hour or part thereof.

5.2.1 How much will it cost to park from 22:00 – 07:00? (3)

5.2.2 Show that the cost for parking from 14:30 to 22:15 will be R26,00. (9)

5.2.3 Why, do you think, are the charges for parking at night cheaper than during the day? (1)

**[21]**

**TOTAL 100**



Annexure A

