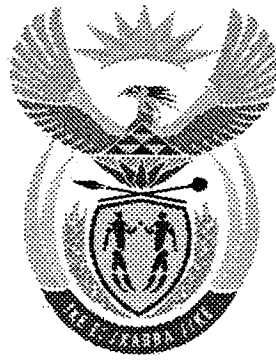


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education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

**SUBJECT: MATHEMATICAL LITERACY
NQF LEVEL 2
PAPER 2**

NOVEMBER 2007

(***)**

**(X-Paper)
09:00 – 12:00**

EXEMPLAR QUESTION PAPER

This question paper consists of 8 pages.



DEPARTMENT OF EDUCATION
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE (VOCATIONAL)
MATHEMATICAL LITERACY: NQF LEVEL 2
TIME: 3 HOURS
MARKS: 150

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions:

1. This question paper consists of FIVE questions. Answer ALL the questions.
 2. Clearly show ALL calculations, diagrams, graphs, etc you have used in determining the answers.
 3. An approved calculator may be used, unless stated otherwise.
 4. Drawing instruments including rulers, pairs of compasses and protractors may be used.
 5. Number the answers CORRECTLY according to the numbering system used in this question paper.
 6. Diagrams are not necessarily drawn to scale.
 7. Write neatly and legibly.
-



QUESTION 1

Simpiwe is a student at an FET College enrolled for a NC(V): Marketing.

Her parents deposit R1 250,00 into her bank account every month. This money is meant to pay for Simphiwe's tuition, rent, food and transport costs. She has a part time job as a shop assistant where she is paid per hour. The income from this job pays for all her other expenses.

1.1 Income and expenditure statements and budgets

Simpiwe keeps an accurate record of all her income and expenses. Her actual income and expenses statement for the months of May, June and July are shown below.

	May	June	July
INCOME	R1 781,28	R1 680,52	R1 772,12
Parents	R1 250,00	R1 250,00	R1 250,00
Part-time job	R531,28	R430,52	R522,12
COSTS	R1 719,47	R1 673,27	R1 796,23
Tuition fees	R219,00	R219,00	R219,00
Rent	R300,00	R300,00	R300,00
Food	R493,57	R487,55	R503,28
Transport (taxi)	R285,00	R235,00	R310,00
Telephone	R60,00	R48,00	R60,00
Toiletries	R43,25	R44,78	R38,68
Clothing	R123,55	R168,05	R135,24
Entertainment	R158,23	R135,00	R188,27
Bank fees	R36,87	R35,89	R41,76
Savings	R0,00	R0,00	R0,00
SURPLUS/(LOSS)	R61,81	R7,25	(R24,11)

- 1.1.1 Give an example of each of the following from Simphiwe's statement, in each case you must justify your selection:
- Fixed monthly income** (2)
 - Variable monthly income** (2)
 - Fixed monthly expense** (2)
 - Variable monthly expense** (2)
 - High priority monthly expense** (2)
 - Low priority monthly expense** (2)
- 1.1.2 By considering Simphiwe's tuition, rent, food and transport costs for each month determine whether or not the money Simphiwe receives from her parents covers the costs it is intended to. Discuss (5)
- 1.1.3 In her part time job Simphiwe is paid R9,25 per hour 1% of which is deducted for her Unemployment Insurance Fund (UIF) contribution. Calculate how many hours she worked in May. (6)



- 1.1.4 The petrol price is about to increase by 38c from R6,23/ℓ . If the taxi fare will increase in proportion determine how much Simphiwe should budget for taxi fare for each of the next three months. Give a detailed explanation for your answer. (6)
- 1.1.5 If Simphiwe expects her variable costs to increase by 2,5% in August, and would like to start saving R150,00 per month toward a end of year holiday.
Develop a budget for August for her anticipated costs using the same headings that are in her income and expenses statement and using the value for transport determined in 1.1.4. (6)
- 1.1.6 Simphiwe can work no more than 65 hours per month and her parents are unable to increase the money that they give her. Develop a budget for her anticipated income for August. (4)
- 1.1.7 Discuss two different ways in which Simphiwe can reduce the shortfall between her anticipated income and costs in August. (3)

1.2 Banking costs

The bank charges Simphiwe for her the transactions she makes on her account.

The bank uses different formulae to determine these fees. The formula for the debit order transaction fee is expressed as follows: $R3,10/0,6\%$.

This means that the debit order transaction fee is made up of a basic amount of R3,10 plus a transaction amount of 0,6% of the value of the transaction.

For example the transaction fee for the payment of Simphiwe's tuition fee which is done by debit order is: $R3,10 + 0,6\% \times R219,00 = R4,41$

- 1.2.1 Calculate the transaction fee for the rental payment which is also done by means of a debit order. (4)
- 1.2.2 The transaction fee for making a cash withdrawal from her account via an ATM is determined using the formula $R4,50/0,4\%$.
Calculate the cost of a R300,00 cash withdrawal using an ATM (5)
- 1.2.3 Compare the monthly transaction fees for the following scenarios
a. Simphiwe withdraws R200 cash from the ATM each weekend (for groceries, clothes and entertainment) and pays her tuition fees and rent by debit order (assume four weekends in a month). (6)
b. Simphiwe withdraws R200 cash from the ATM on each of three weekends and on the fourth weekend withdraws R720 – enough for groceries etc., rent and tuition fees which she pays in cash (6)
- 1.2.4 List one advantage and one disadvantage for each of the two scenarios described above (4)

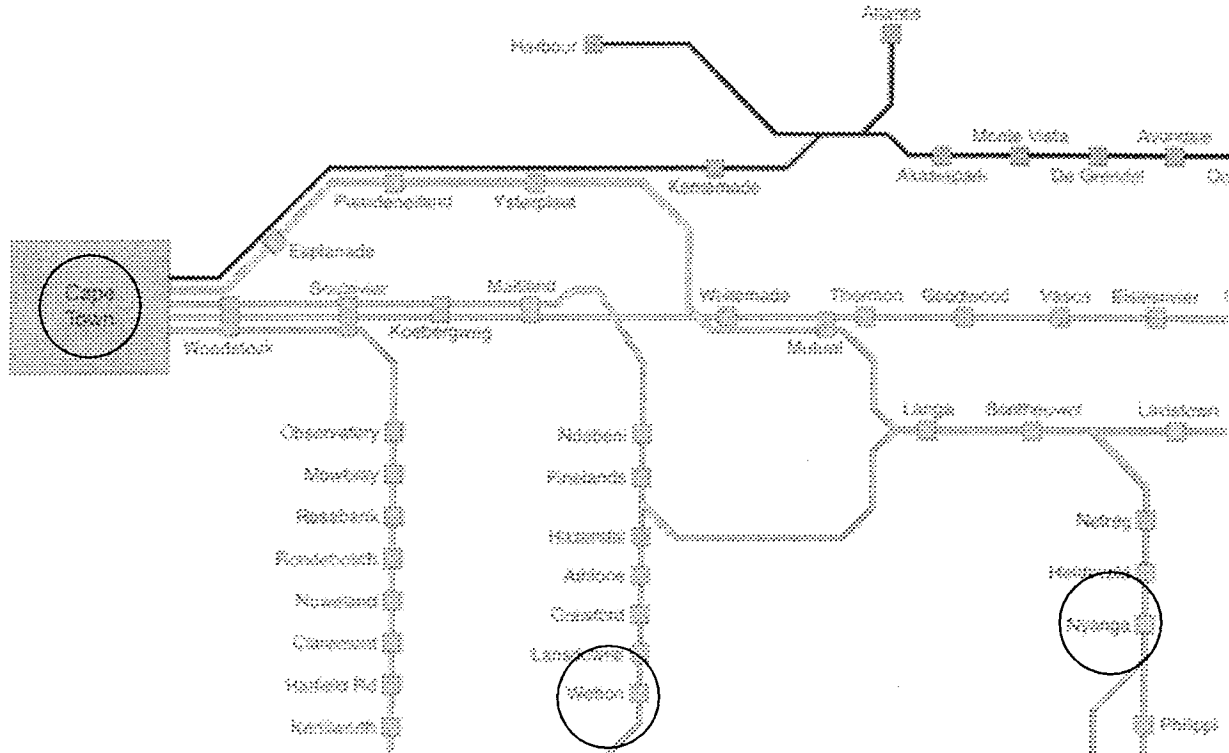
[67]



QUESTION 2

The following have been provided and should be used to answer the questions that follow:

- An portion of the Cape Town Metro Rail train route map with three stations (Nyanga, Wetton and Cape Town) highlighted by means of circles;
- An extract of the timetable for the Khayelitsha to Cape Town timetable; and
- An extract of the Cape Town Retreat timetable.



FROM KHAYELITSHA - KAPTEINSKLIP - SAREPTA - LANGA TO CAPE TOWN (extract)									
TRAIN NO.	9428	9216	9516	9438	9518	9442	9522	9524	TRAIN NO.
NYANGA	06:43	06:51	07:03	07:09	07:16	07:31	07:34	07:41	NYANGA
HEIDEVELD	06:47	06:55	07:07	07:13	07:19	07:35	07:38	07:45	HEIDEVELD
NETREG	06:51	06:59	07:11	07:17	07:23	07:39	07:42	07:49	NETREG
BONTHEUWEL	06:54	07:02	07:14	07:20	07:27	07:42	07:45	07:52	BONTHEUWEL
LANGA	06:58	07:06	07:18	07:24	07:31	07:46	07:49	07:56	LANGA
MUTUAL	07:02	07:10	..	07:28	..	07:50	..	..	MUTUAL
YSTERPLAAT	07:08	07:16	..	07:34	..	07:56	..	..	YSTERPLAAT
PAARDENEILAND	..	..	..	..	..	..	..	..	PAARDENEILAND
ESPLANADE	07:13	07:21	..	07:39	..	08:01	..	..	ESPLANADE
PINELANDS	..	..	07:23	..	07:36	..	07:54	08:01	PINELANDS
NDABENI	..	..	07:25	..	07:38	..	07:56	08:03	NDABENI
MAITLAND	..	..	07:28	..	07:41	..	07:59	08:06	MAITLAND
KOEBERG RD	..	..	07:30	..	07:43	..	08:01	08:08	KOEBERG RD
SALT RIVER	..	..	07:33	..	07:46	..	08:04	08:11	SALT RIVER
WOODSTOCK	..	..	07:36	..	07:49	..	08:07	08:14	WOODSTOCK
CAPE TOWN	07:18	07:26	07:40	07:44	07:53	08:06	08:11	08:18	CAPE TOWN



CAPE TOWN - RETREAT VIA CAPE FLATS (extract)							
TRAIN NO.	519	521	523	525	527	529	TRAIN NO.
CAPE TOWN	07:10	07:26	07:38	07:57	08:29	09:03	CAPE TOWN
WOODSTOCK	07:13	07:29	07:41	08:00	08:32	09:06	WOODSTOCK
SALT RIVER	07:16	07:32	07:44	08:03	08:35	09:09	SALT RIVER
KOEBERG RD	07:18	07:34	07:46	08:05	08:37	09:11	KOEBERG RD
MAITLAND	07:20	07:36	07:48	08:07	08:39	09:13	MAITLAND
NDABENI	07:23	07:39	07:51	08:10	08:42	09:16	NDABENI
PINELANDS	07:26	07:42	07:54	08:13	08:45	09:19	PINELANDS
HAZENDAL	07:28	07:44	07:56	08:15	08:47	09:21	HAZENDAL
ATHLONE	07:31	07:47	07:59	08:18	08:50	09:24	ATHLONE
CRAWFORD	07:33	07:49	08:01	08:20	08:52	09:26	CRAWFORD
LANSDOWNE	07:35	07:51	08:03	08:22	08:54	09:28	LANSDOWNE
WETTON	07:38	07:54	08:06	08:25	08:57	09:31	WETTON
OTTERY	07:40	07:56	08:08	08:27	08:59	09:33	OTTERY
SOUTHFIELD	07:44	08:00	08:12	08:31	09:03	09:37	SOUTHFIELD

- 2.1 Use the train route map and timetable to answer the following questions
- 2.1.1 There are two different routes that the train takes from Nyanga to Cape Town. List the stations on each route by completing the two routes below:
 Route 1: Nyanga – Langa – Mutual – ...
 Route 2: Nyanga – Langa – Pinelands – ... (4)
- 2.1.2 By referring to the appropriate timetable determine which route (Route 1 or Route 2) is used by each of the following trains:
- a. Train number 9516 (1)
 b. Train number 9438 (1)
- 2.1.3 Answer the following questions with respect to train number 9524
- a. At what time does the train depart from Nyanga? (1)
 b. At what time does the train arrive in Cape Town? (1)
 c. How long does the journey take? (1)
- 2.1.4 List the trains that can you take if you want to travel from Nyanga to Cape Town and want to depart from Nyanga after 07:00 and arrive in Cape Town before 08:00. You need only write down the train numbers (4)



2.2 Mr and Mrs Bhele live in Nyanga. Mr Bhele works in Wetton and Mrs Bhele in Cape Town.

They like to travel together from Nyanga.

2.2.1 On a particular day they depart from Nyanga on train no. 9216. In Cape Town Mr Bhele joins a train on the Cape Town – Retreat line. What is earliest that Mr Bhele can get to Wetton? Give a detailed explanation of your answer which includes arrival and departure times and train numbers. (8)

2.2.2 Show that it is possible for Mr and Mrs Bhele to depart from Nyanga after 07:00 and for Mr Bhele to still arrive in Wetton before 08:00. Give a detailed explanation of your answer which includes arrival and departure times and train numbers. (10)
[31]

QUESTION 3

In Johannesburg residents are allowed to choose from two options, the way that they are charged for electricity.

The unit of electricity consumption is the kilo-Watt-hour (kWh)

Option 1: (Life Line rate) The first 50 kWh of electricity every month are free and after that electricity is charged at R0,40 per kWh.

Option 2: (Two part rate) There is an initial monthly service fee of R70,00 and electricity is charged at R0,25 per kWh.

3.1 Calculating the monthly charge

3.1.1 Option 1: Show how the following monthly charges have been calculated

- a. Consumption 50kWh: cost = R0,00 (1)
- b. Consumption 100kWh: cost = R20,00 (3)
- c. Consumption 300kWh: cost = R100,00 (3)

3.1.2 Option 2: Show how the following monthly charges have been calculated

- a. Consumption 0kWh: cost = R70,00 (1)
- b. Consumption 300kWh: cost = R145,00 (3)

3.1.3 Determine the values of A and B in the table below

Consumption (kWh)	0	50	100	300	700
Option 1 (rand)	0,00	0,00	20,00	100,00	A
Option 2 (rand)	70,00			145,00	B

(6)



3.2 Making a choice

- 3.2.1 Use the table of values developed in 3.1.3 and the graph paper provided to draw a graph that compares the cost of the two options for consumptions up to 700kWh per month. (10)
- 3.2.2 Use you graph to determine for what consumption the two options would cost exactly the same amount. (2)
- 3.2.3 Explain, in terms of monthly consumption, under what conditions customers should choose Option 1 and Option 2 (4)
- [33]

QUESTION 4

Doctors agree that one of the most effective ways of preventing the spreading of flu is to wash your hands frequently.

Several studies have been conducted around the world to determine people's hand washing habits, data from one such survey is provided below.

Percentage of respondents who claim to ALWAYS wash their hands after certain activities	Gender		Age (years)		
	Men	Women	< 35	35 - 54	55 +
After playing with the dog/cat	38%	48%	43%	38%	49%
After coughing/sneezing	23%	38%	23%	31%	33%
After handling money	17%	28%	17%	19%	29%
After using the bathroom	84%	89%	79%	88%	89%

4.1 Habits by gender

- 4.1.1 Based on the data provided, who would you argue has the better hand washing habits: men or women? Justify your answer. (3)
- 4.1.2 If you were asked to develop an advert aimed at improving hand washing habits. Which of the four activities would you target? Justify your answer. (3)

4.2 Habits by age

- 4.2.1 Draw a compound bar graph on the grid paper provided that compares the hand washing habits for the four activities in terms of the age of the respondents. (10)
- 4.2.2 If you were asked to develop an advert aimed at improving hand washing habits. Which age group(s) would you target? Justify your answer. (3)
- [19]



This memorandum consists of 9 pages.

Question 1

Number	Solution	Comment	Marks
1.1			
1.1.1.a	Money from her parents (R1 250,00) Her parents give her the same amount each month.	1 mark solution 1 mark justification	2
1.1.1.b	Income from her part time job. She is paid by the hour at work so her income from work will depend on the number of hours she has worked. From the statement it can be seen that this amount changes each month.	1 mark solution 1 mark justification	2
1.1.1.c	One of; Tuition fees (R219,00). Rent (R300,00) From the statement it can be seen that this amount is fixed for each month	1 mark solution 1 mark justification	2
1.1.1.d	One of: Transport Telephone Toiletries Clothing Entertainment Bank fees From the statement it can be seen that this amount changes each month.	1 mark solution 1 mark justification	2
1.1.1.e	One or: Tuition fees. She wants to get an education and therefore must pay her tuition fees Rent. She must have a place to stay and if she does not pay her rent she will be asked to leave Food. She needs to eat to stay healthy so she does not miss any of her classes so food is a high priority Transport. She needs to get to classes so transport is a high priority	1 mark solution 1 mark justification	2
1.1.1.f	One of: Telephone Toiletries Clothing Entertainment None of the above are essential to her in order to get an education so are not important	1 mark solution 1 mark justification	2



Number	Solution	Comment	Marks																								
1.1.2	<table border="1"> <thead> <tr> <th></th> <th>May</th> <th>June</th> <th>July</th> </tr> </thead> <tbody> <tr> <td>Tuition</td> <td>R219,00</td> <td>R219,00</td> <td>R219,00</td> </tr> <tr> <td>Rent</td> <td>R300,00</td> <td>R300,00</td> <td>R300,00</td> </tr> <tr> <td>Food</td> <td>R493,57</td> <td>R487,55</td> <td>R503,28</td> </tr> <tr> <td>Transport</td> <td>R285,00</td> <td>R235,00</td> <td>R310,00</td> </tr> <tr> <td>Total:</td> <td>R1297,57</td> <td>R1241,55</td> <td>R1332,28</td> </tr> </tbody> </table>		May	June	July	Tuition	R219,00	R219,00	R219,00	Rent	R300,00	R300,00	R300,00	Food	R493,57	R487,55	R503,28	Transport	R285,00	R235,00	R310,00	Total:	R1297,57	R1241,55	R1332,28	1 mark for the total for each month (3) 2 marks for discussion	
	May	June	July																								
Tuition	R219,00	R219,00	R219,00																								
Rent	R300,00	R300,00	R300,00																								
Food	R493,57	R487,55	R503,28																								
Transport	R285,00	R235,00	R310,00																								
Total:	R1297,57	R1241,55	R1332,28																								

Simphiwe receives R1 250,00 from her parents every month. This amount managed to cover the cost of her tuition, rent, food and transport only once in three months. It seems that the money she receives from her parents is not quite covering what it was intended to.

5

1.1.3 Amount earned per hour = R9,25
 less 1% for UIF
 = R9,25 - 1% × R9,25
 = R9,16 per hour

hourly rate less UIF
 1 mark method
 1 mark substitution
 1 mark answer

Total earned in May = R531,28

hours worked
 1 mark method
 1 mark substitution
 1 mark answer

∴ number of hours
 = R531,28 ÷ R9,16/hour = 58 hours

Accept variations on the method that produce an answer of 58 ± 1 hour
 -1 mark no units

6

1.1.4 % increase in taxi fare = $\frac{R0.38}{R6.23/l} \approx 6,1\%$
 Average taxi fare over the 3 months
 = $\frac{R285 + R235 + R310}{3}$
 ≈ R277,00
 She should budget = 106,1% × R277
 = R293,90
 ≈ R294

2 marks percentage change
 2 marks average fare over the three months
 1 mark amount to budget
 1 mark discussion

NOTE: Accept variations on this solution e.g. based on July costs only etc.

Summary: The average amount that she spent on taxi fares over the past 3 months was approximately R280 therefore she should budget for a 6% increase on this average amount. This means she should budget for approximately R300 or more per month.

6



Number	Solution	Comment	Marks
1.1.5	<p>Average prev. months August</p> <p>EXPENSES</p> <p>Tuition R219,00</p> <p>Rent R300,00</p> <p>Food R495,00 R507,00</p> <p>Transport (taxi) R294,00</p> <p>Telephone R56,00 R57,00</p> <p>Toiletries R42,00 R43,00</p> <p>Clothing R142,00 R146,00</p> <p>Entertainment R161,00 R165,00</p> <p>Bank fees R38,00 R39,00</p> <p>Savings R150,00</p> <p>TOTAL R1920,00</p>	<p>1 mark tuition and rent unchanged</p> <p>1 mark transport as per (1.1.4)</p> <p>1 mark savings</p> <p>2 mark values for other costs – evidence of a method would be great</p> <p>1 mark total</p>	6
1.1.6	<p>Hourly rate less 1% UIF = R9,16</p> <p>Max earnings = $65 \times R9,16$</p> <p>= R595,40</p> <p>INCOME August</p> <p>Parents R1 250,00</p> <p>Part-time job R595,40</p> <p>TOTAL R1845,40</p>	<p>2 marks calculating income from part-time job</p> <p>2 marks budget</p>	4
1.1.7	<p>Shortfall \approx R75,00.</p> <p>She could aim to save only R75 per month.</p> <p>She could try reduce the spending on her low priority expenses such as clothing, telephone and entertainment</p> <p>Other</p>	<p>1 mark for discussing extent of shortfall</p> <p>1 mark for each method that seems reasonable</p>	3
1.2			
1.2.1	<p>Transaction fee</p> <p>= R3,10 + 0,6% of transaction amount</p> <p>= R3,10 + 0,6% \times R300,00</p> <p>= R4,90</p>	<p>1 mark formula</p> <p>1 mark substitution</p> <p>2 marks correct answer</p> <p>-1 mark no units</p>	4
1.2.2	<p>Transaction fee</p> <p>= R4,50 + 0,4% of transaction amount</p> <p>= R4,50 + 0,4% \times R300,00</p> <p>= R5,70</p>	<p>2 marks formula</p> <p>1 mark substitution</p> <p>2 marks correct answer</p> <p>-1 mark no units</p>	5
1.2.3.a	<p><u>Cash withdrawal fees for the month:</u></p> <p>$4 \times (R4,50 + 0,4\% \times R200,00) = R21,20$</p> <p><u>Debit order fees for the month:</u></p> <p>$R4,90 + R4,41 = R9,31$</p> <p><u>Total bank fees for month:</u></p> <p>$= R21,20 + R9,31 = R30,51$</p>	<p>2 marks cash withdrawal fees</p> <p>2 marks debit order fees</p> <p>2 marks total costs</p>	6



Number	Solution	Comment	Marks
1.2.3.b	Cash withdrawal fees for the month: $= 3 \times (R4,50 + 0,4\% \times R200,00)$ $+ (R4,50 + 0,4\% \times R720,00)$ $= R23,28$	2 marks $3 \times R200,00$ cash withdrawal fees 2 marks $1 \times R720,00$ cash withdrawal fees 2 marks total costs	6
1.2.4	Approach 1 (1.2.3.a) <u>Advantage:</u> She does not have to worry about her rent and tuition payments as they are automatically deducted. It is the safer option <u>Disadvantage:</u> It is the more expensive option. Approach 2 (1.2.3.b) <u>Advantage:</u> It is the cheaper option. <u>Disadvantage:</u> She has to withdraw and carry a large amount of cash with her which is not safe. She has to physically go and pay her accounts.	Approach 1 1 mark for valid advantage 1 mark for valid disadvantage Approach 2 1 mark for valid advantage 1 mark for valid disadvantage	4

Question 2

Number	Solution	Comment	Marks
2.1			
2.1.1	<u>Route 1:</u> Nyanga – Langa – Mutual – Ysterplaat – Paardeneiland – Esplanade – Cape Town <u>Route 2:</u> Nyanga – Langa – Pinelands – Ndabeni – Maitland – Koebergweg – Souttrivier – Cape Town	2 marks each correct route Allow up to one station to be omitted per route as long as the routes are clear	4
2.1.2.a	Route 2		1
2.1.2.b	Route 1		1
2.1.3.a	07:41		1
2.1.3.b	08:18		1
2.1.3.c	38 minutes		1
2.1.4	9516; 9438; 9518	1 mark per correct train 1 mark all of three trains	4



Number	Solution	Comment	Marks
2.2			
2.2.1	<p>He leaves Nyanga on train 9216 at 06:51 and arrives in Cape Town at 07:26. His then takes train 523 on the Retreat line departing at 07:36 and arrives in Wetton at 08:06.</p> <p>NOTE: he could also take train 521 departing at 07:26 provided that train number 9216 is early</p>	<p><u>Nyanga to Cape Town</u> 1 marks train no 1 mark departure time 1 mark arrival time</p> <p><u>Cape Town to Wetton</u> 2 marks selecting appropriate train 1 mark train number 1 mark departure time 1 mark arrival time</p>	8
2.2.2	<p>He leaves Nyanga on train 9518 at 07:16 and gets of the train in Pinelands at 07:36. His then takes train 521 on the Retreat line departing from Pinelands at 07:42 and arrives in Wetton at 07:54.</p> <p>OR</p> <p>He leaves Nyanga on train 9516 at 07:03 and gets of the train in Pinelands at 07:23. His then takes train 519 on the Retreat line departing from Pinelands at 07:26 and arrives in Wetton at 07:38.</p> <p>OR</p> <p>He leaves Nyanga on train 9516 at 07:03 and gets of the train in Pinelands at 07:23. His then takes train 521 on the Retreat line departing from Pinelands at 07:42 and arrives in Wetton at 07:54.</p>	<p>5 marks for a valid solution 1 marks train numbers 2 marks departure times 2 marks arrival times</p> <p>NOTE there are also solutions like these involving Ndabeni</p>	10

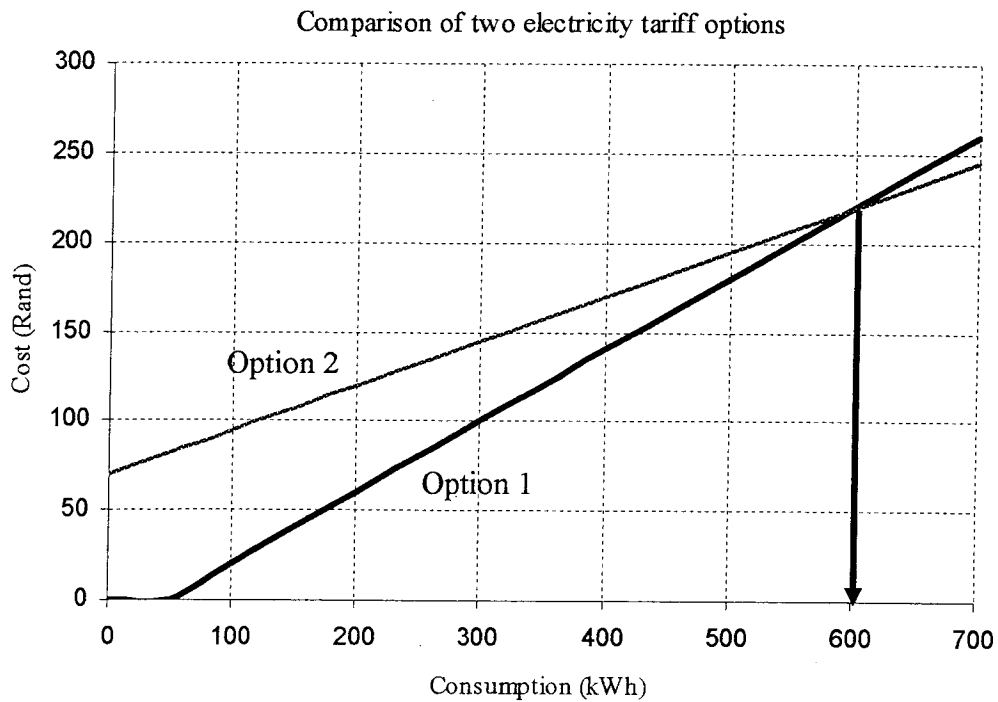
Question 3

Number	Solution	Comment	Marks
3.1			
3.1.1.a	First 50kWh are free therefore there is no cost.		1
3.1.1.b	<p>First 50kWh = R0,00 Next 50kWh = R0,40/kWh \times 50kW = R20,00 Therefore total = R20</p>	<p>1 mark first 50kWh 1 mark next 50kWh 1 mark total</p>	3
3.1.1.c	<p>First 50kWh = R0,00 Next 250 kWh = R0,40/kWh \times 250kW = R100,00 Therefore total = R100</p>	<p>1 mark first 50kWh 1 mark next 250kWh 1 mark total</p>	3



Number	Solution	Comment	Marks
3.1.2.a	Cost = service fee + consumption fee = R70,00 + consumption × R0,25/kWh = R70,00 + 0kWh × R0,25/kWh = R70,00	1 mark correct answer	1
3.1.2.b	Cost = service fee + consumption fee = R70,00 + consumption × R0,25/kWh = R70,00 + 300kWh × R0,25/kWh = R145,00	1 mark formula 1 mark substitution 1 mark correct answer	3
3.1.3	A Cost = (consumption – 50kWh) × R0,40/kWh = (650 – 50kWh) × R0,40/kWh = R260,00 B Cost = service fee + consumption fee = R70,00 + consumption × R0,25/kWh = R70,00 + 700kWh × R0,25/kWh = R245,00	A 1 mark formula 1 mark substitution 1 mark correct answer B 1 mark formula 1 mark substitution 1 mark correct answer	6

3.2
3.2.1



- 1 mark per axis label
- 1 mark graph title
- 1 mark graph labels
- 3 marks graph of Option 1 (max of 1 if constant part for 0kWh to 50kWh is not drawn)
- 3 marks graph of Option 2



Number	Solution	Comment	Marks
3.2.2	600kWh	Allow for a variation of up to 10kWh – depending on quality of graph	2
3.2.3	If consumption < 600kWh then the customer should chose Option 1. If consumption > 600kWh then the customer should chose Option 2.	2 marks per inequality NOTE: base marking on answer from 3.2.2	
	A sophisticated answer would read: consumption < \approx 550kWh \Rightarrow Option 1 consumption > \approx 650kWh \Rightarrow Option 2 550 kWh < consumption < 650kWh \Rightarrow that either option makes sense as consumption will vary from month to month and within this range the two option are not that different in value		4

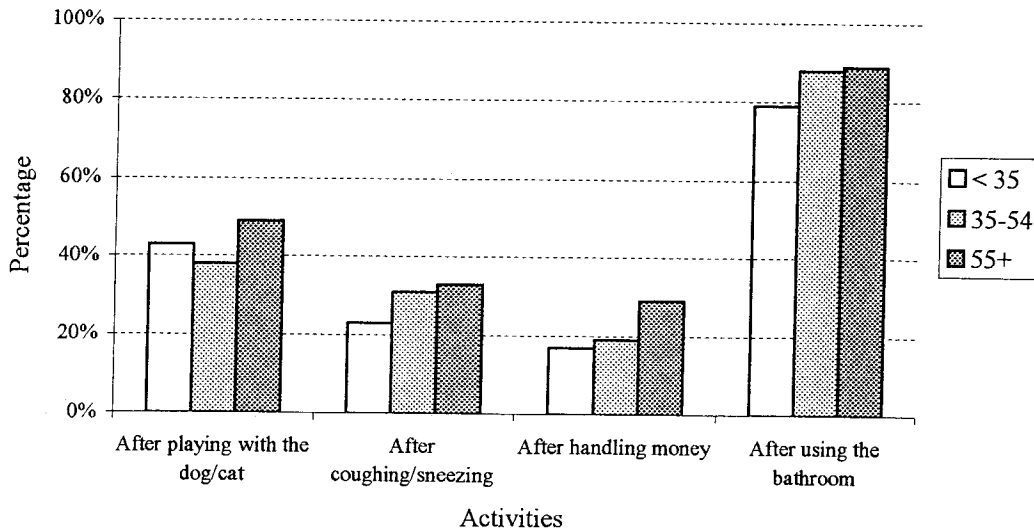
Question 4

Number	Solution	Comment	Marks
4.1			
4.1.1	Women have the better habits. In every category the percentage of women who wash their hands is larger than the percentage of men.	1 mark making a choice 2 marks substantial reason OR 1 mark insubstantial reason	3
4.1.2	After handling money. The lowest percentage of both men and women wash their hands after handling money. OR After coughing/sneezing. Although the percentage of people who don't wash hands after handling money is lower – coughing and sneezing involve more germs and so contribute more to the spreading of flu.	1 mark making a choice 2 marks substantial reason OR 1 mark insubstantial reason	3



4.2
4.2.1

% of people who always wash their hands



- 1 mark per axis label
- 1 mark graph title
- 1 mark reference/age group labels
- 2 marks for graph of each age group
- 1 mark is categories touch

10

- 4.2.2 The < 35 year age group
- They have the lowest percentage for three out of the four activities and they are most likely to be teaching good habits to their own children.

- 1 mark making a choice
- 2 marks substantial reason
- OR
- 1 mark insubstantial reason

3

