

TIME: 3 HOURS
MARKS: 150

MATHEMATICAL LITERACY

(PAPER 1)

JUNE 2008



education

Western Cape Education Department

NATIONAL STRATEGY FOR LEARNER ATTAINMENT
NATIONAL SENIOR CERTIFICATE

JUNE EXAMINATION - 2008

This question paper consists of **15** pages and **2** annexures

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of EIGHT questions. Answer ALL the questions.
2. QUESTIONS 2.2.4 and 6.1.3 and 6.2.2 must be answered on the attached ANNEXURES. Write your name / examination number in the spaces provided and hand in the annexure with the ANSWER BOOK.
3. Number the questions correctly according to the numbering system used in this question paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. ALL calculations must be shown clearly.
6. ALL the final answers must be rounded off to TWO decimal places, unless stated otherwise.
7. Start EACH question on a NEW page.
8. Write neatly and legibly.

QUESTION 1

1.1 Calculate the following:

1.1.1 $240 + 21,5 \times 12$ (2)

1.1.2 $\frac{1}{3}(24 + 15) - 7$ (2)

1.1.3 $\frac{2}{5}$ of 105 kg (1)

1.1.4 5% of 1 240 learners (2)

1.2 Do the following:

1.2.1 Express 0,5 as a percentage (1)

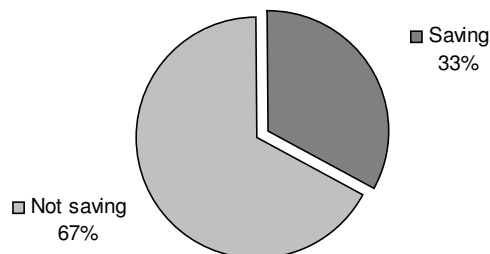
1.2.2 Express $\frac{4}{5}$ as a decimal (1)

1.2.3 Simplify: $32 : 4$ (2)

1.2.4 Reduce R250 by 20% (2)

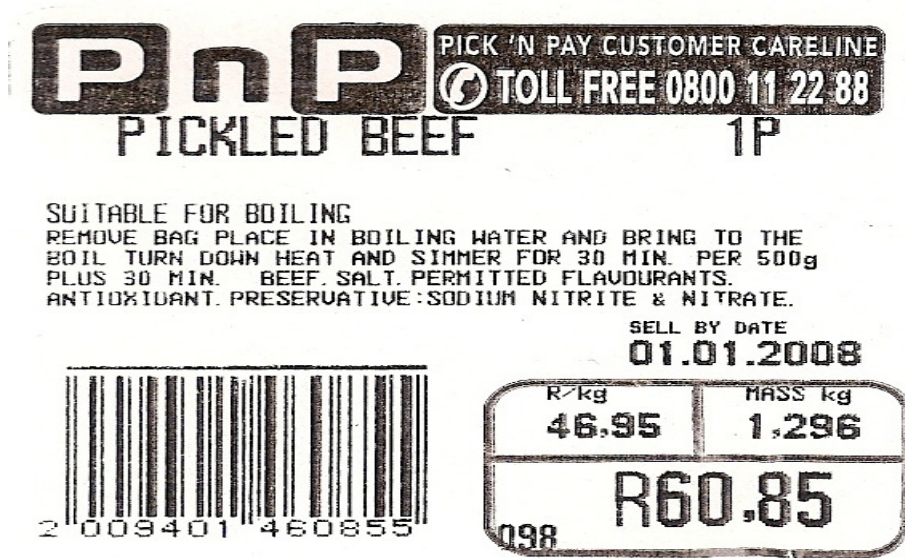
1.2.5 What fraction is seven days of the month February if it is not a leap-year? (2)

1.3 The following graph appeared in "The Business Report" of *The Star* on Friday, 12 April 2008. It shows the number of people that are **currently saving money**. Study the graph and answer the questions.



- 1.3.1 What percentage of South Africans are currently saving their money? (1)
- 1.3.2 Why do you think there are so few people in South Africa saving money? (1)
- 1.3.3 What is the ratio of people not saving, to those who are saving money? (2)

1.4 The following label appeared on a piece of pickled beef that Rose bought. Answer the following questions.



- 1.4.1 Where did Rose buy the pickled beef? (1)
- 1.4.2 What was the weight of the beef? (1)
- 1.4.3 How much did Rose pay for the beef? (1)
- 1.4.4 How much will 3,5 kg of pickled beef cost? (2)
- 1.4.5 On the label they explain how to boil the beef.
Remove bag. Place in boiling water and bring to boil. Turn down heat and simmer for 30 minutes per 500 g, plus 30 minutes.
How long will Rose have to boil a **1,5 kg** piece of beef before it is cooked? (3)

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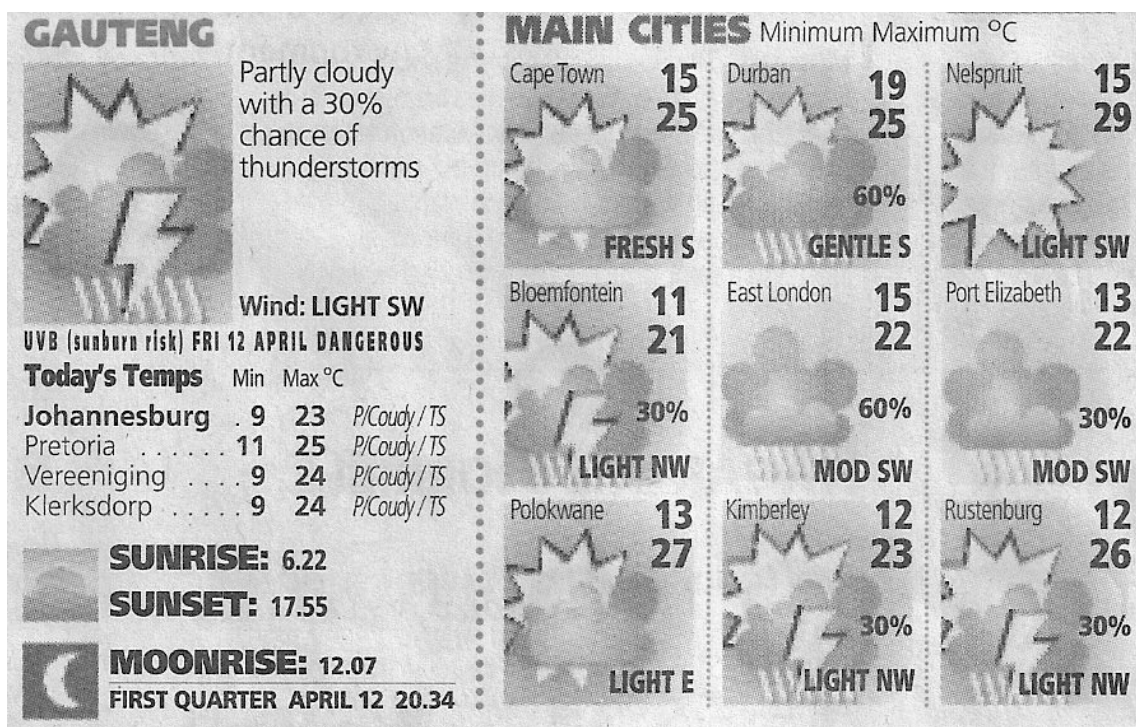
QUESTION 2

2.1 Answer the following questions:

2.1.1 If 10 painters use 500 litres of paint to paint a building, how many litres of paint will **12 painters** use to paint the same building? (2)

2.1.2 If 10 painters take 18 days to paint a building, how many days will 12 painters take to paint the same building? (3)

2.2 Study the weather forecast for Gauteng and the main cities in South Africa and then answer the questions that follow *The Star : Friday 12 April 2008*



2.2.1 On what day and date did the weather forecast appear in the newspaper? (2)

2.2.2 Exactly how long was the day? (from sunrise to sunset) Give the answer accurately in hours and minutes. (2)

2.2.3 Which **city** shown in the weather report:

- is going to be the **warmest** on this specific day? (1)
- is going to have the **lowest maximum temperature** and how much will it be? (2)
- is going to have the **least difference** between **minimum and maximum** temperatures? (2)

- 2.2.4 On the graph in Annexure A the minimum temperatures for six of the main cities have been drawn. Complete the **double bar graph** by drawing the **maximum temperatures** of the cities next to the minimum temperatures. Give a suitable title for your graph. (7)
- 2.2.5 The weather bureau predicted a 30% chance of thunderstorms for Gauteng, but in the end there were **no** thunderstorms. Was the weather prediction correct? Give a reason for your answer. (2)

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QUESTION 3

3.1 The Themba family loves shopping. During the week Mrs Themba studies all the advertisements and on a Saturday she knows exactly where to find the best bargains. During the week she saw the following two advertisements in a newspaper. Study them and answer the questions.



- 3.1.1 What product is being advertised? (1)
- 3.1.2 What is the normal price of bio classic at Pick n Pay? (1)
- 3.1.3.1 How many rand is the bio classic marked down at Pick n Pay? (1)
- 3.1.3.2 What percent is the bio classic marked down at Pick n Pay? (2)

3.2 At Edgars Mrs Themba’s daughter, Thandi, saw two Levi-jeans that she like. Both the jeans were on sale. The price tags on the garments were as follows:

Jeans 1

R359.00

Less 35%

Jeans 2

R299.00

Less $\frac{1}{5}$ of price

- 3.2.1 What will the prices of both jeans be on the sale **after the discount have been deducted** ? Show all your calculations. (6)
- 3.2.2 Which jeans are the cheapest after being marked down? (1)

[12]

QUESTION 4

4.1 The "Super 14" Rugby competition has been big news for the past four months. Every Friday and Saturday most of the people sit nailed to the television to watch their favourite teams perform. The table shows some of the players scores since the beginning of the competition until Friday, 4 April 2008.

Player	Team	Tries	Conversions	Penalties	Dropgoals	Total
Dan Carter	Crusaders	4	22	13	0	103
Stephen Donald	Chiefs	4	20	11	0	93
Nick Evans	Blues	2	21	9	0	79
Peter Grant	Vodacom Stormers	2	11	14	0	74
Derick Hougaard	Vodacom Bulls	0	9	15	2	69
Matt Giteau	Western Force	2	11	11	0	65
Clinton Schifcofske	Reds	2	10	10	0	60
Jimmy Gopperth	Hurricanes	1	10	6	0	43
Mark Gerrard	Brumbies	1	11	4	0	39
Rory Kockott	The Sharks	0	7	8	0	38
Kurtley Beale	Waratahs	0	9	6	0	36
Conrad Barnard	Vodacom Cheetahs	0	6	5	0	27
James Wilson	Highlanders	0	6	5	0	27
Jaco van Schalkwyk	Auto & General Lions	3	1	2	1	26

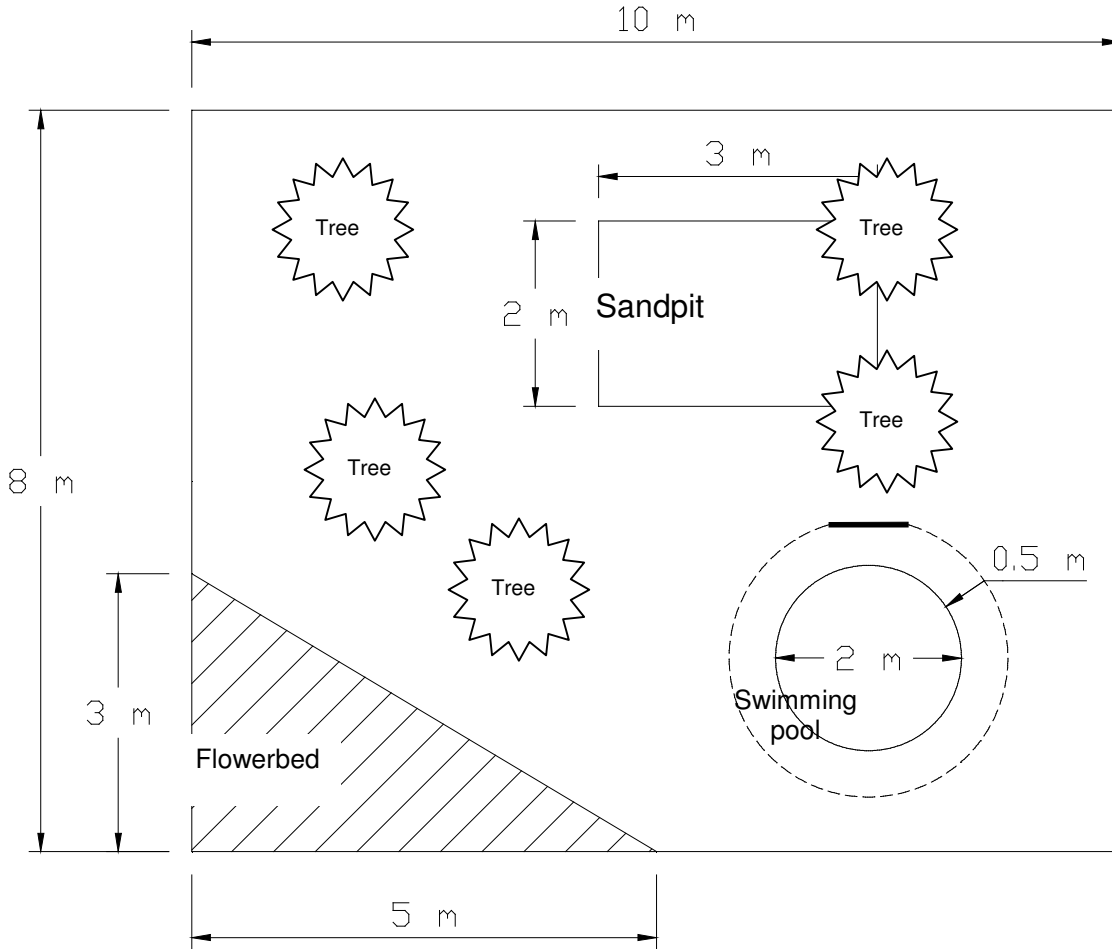
- 4.1.1 Which player scored the most points and for which team does he play? (2)
- 4.1.2 Which player scored the most penalties? If a penalty counts three points, how many points did he score with the penalties? (2)
- 4.1.3 How many tries in total have been scored by all 14 players? (2)
- 4.1.4 What is the **mean** (average) of the **total points** that these players have scored? (4)
- 4.1.5 What is the **mode** of the number of **dropped goals**? (2)
- 4.1.6 Calculate the **median** of the **conversions**? (4)
- 4.1.7 What is the **range** of the **conversions**? (2)
- 4.1.8 A try counts 5 points. How many points did Jaco van Schalkwyk accumulate by just scoring tries? (2)

[20]

QUESTION 5

5.1 A group of concerned people decided to build a house for abused children. A Grade 12 class of a local high school volunteered their services to make the garden at the back of the house safe, neat and child-friendly. They started a flower-bed, planted trees and lawn, made a sand pit and erected a fence around the swimming-pool.

Study the drawing of the back yard of the house and then answer the questions.



- 5.1.1 Each tree covers an area of $1,8 \text{ m}^2$. What area will be covered by all five trees? (2)
- 5.1.2 What is the total area of the backyard?
(Use : Area of a rectangle = length x width) (3)
- 5.1.3 Calculate the area of the flower-garden.
(Use : Area of a triangle = $\frac{1}{2}$ base x height) (3)
- 5.1.4 The depth of the sand-pit is $0,5 \text{ m}$. What is the volume of the sand-pit?
(Use : Volume of a rectangular prism = length x width x depth) (3)

- 5.1.5 To safeguard the swimming-pool, the learners decided to enclose it with fence and a gate. The gate has a width of 0,85 m. What length of fencing do they need to enclose the swimming-pool? (5)
(Use : Circumference of a circle = $2\pi r$, where $\pi = 3,14$)
- 5.1.6 The learners bought 10 metres of fence at R55,99 per metre and the cost of the gate was R149,50. What was their total cost to enclose the swimming-pool? (4)

[20]

QUESTION 6

6.1 Peter, a matric learner, realised that during his matric year he will have quite a few additional expenses. He wanted to buy himself a matric jacket, a jersey and then there is still his important matric farewell ball. He decided to earn extra money by making unique T-shirts. He buys white T-shirts at R15,00 per T-shirt, paints them and then sell them. His initial cost to buy all the paint was R150,00.

6.1.1 He calculated his total expenses as follows:

$$\text{Total expenses} = R150 + (\text{number of T-shirts bought} \times R15)$$

Calculate the value of A and B by using the information given in the table.

(4)

Table 1

Number of t-shirts bought (n)	0	10	20	30	B	50
Total expenses (E) in Rand	150	300	450	A	750	900

6.1.2 Write down a formula that expresses the total expenses (E) in terms of the number of t-shirts (n) that can be bought.

(2)

6.1.3 Use the table in Question 6.1.1 to draw a line graph on the grid in annexure B. Clearly label this graph as *Expenses*.

(5)

6.2 Peter sells his t-shirts at R40,00 each.

6.2.1 Calculate the value of C and D using the information given in the table. Show ALL your calculations

(2)

Table 2

Number of Tshirts sold (n)	0	5	10	15	20	D	50
Income (I) in Rand	0	200	400	C	800	1200	2 000

6.2.2 Use the table in Question 6.2.1 to draw a line graph on the same grid in Annexure B. Clearly label this graph as *Income*.

(5)

6.3 Suppose Peter bought **50 t-shirts**. Use the tables 1 and 2 to answer the following questions.

6.3.1 What were his total expenses?

(1)

6.3.2 What was his income if he sold 50 t-shirts?

(1)

6.3.3 Write down the ratio of his total expenses to his income.

(1)

6.3.4 What was his profit on the 50 t-shirts?

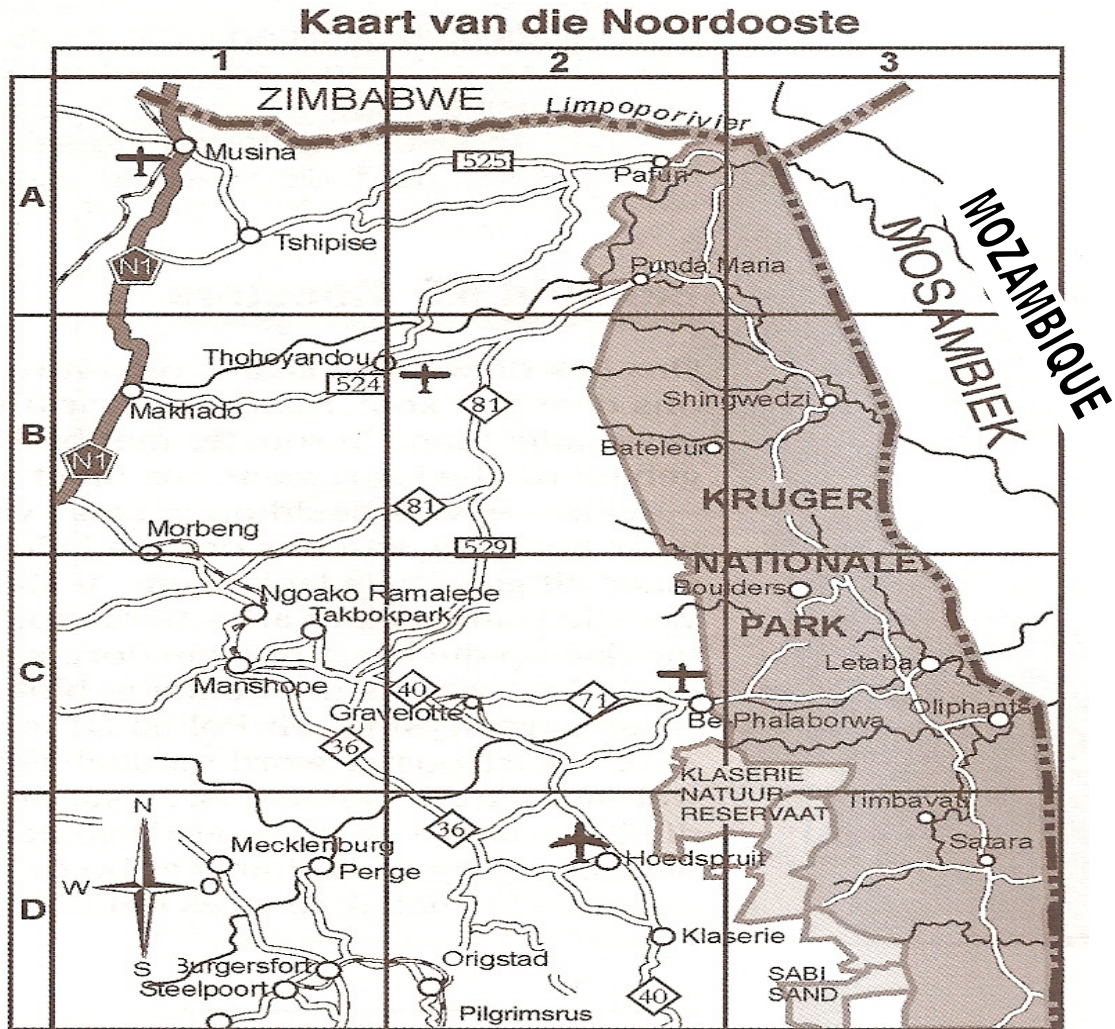
(1)

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QUESTION 7

7.1 Anthea and her family visited the Kruger National Park in December 2007. Study the following map of the area and answer the questions. (The Kruger National Park is represented by the dark area on the map)

Map of the North East



- 7.1.1 Name any country that borders to the Kruger National Park. (1)
- 7.1.2 Anthea and her family travelled by aeroplane to Hoedspruit. Give the map reference of: (1)
 - (a) Hoedspruit (1)
 - (b) Musina
- 7.1.3 All the places on the map of the Kruger National Park are overnight camping sites. Name any two camping sites in the Kruger National Park. (2)
- 7.1.4 Determine the direction in which the aeroplane must fly from Phalaborwa Aerodrome to Thohoyandou Aerodrome. (1)

7.2 Anthea decided to hire a car to drive from the airport. Avis has the following cars available at the specific airport. (All at the same tariff.)

Corsa Lite (one blue and one gold)

VW Golf (one green, one blue, one white and two red)

Toyota Tazz (two blue and one silver)

7.2.1 How many cars are there in total to choose from? (2)

7.2.2 What is the probability of Anthea hiring a Toyota Tazz? (2)

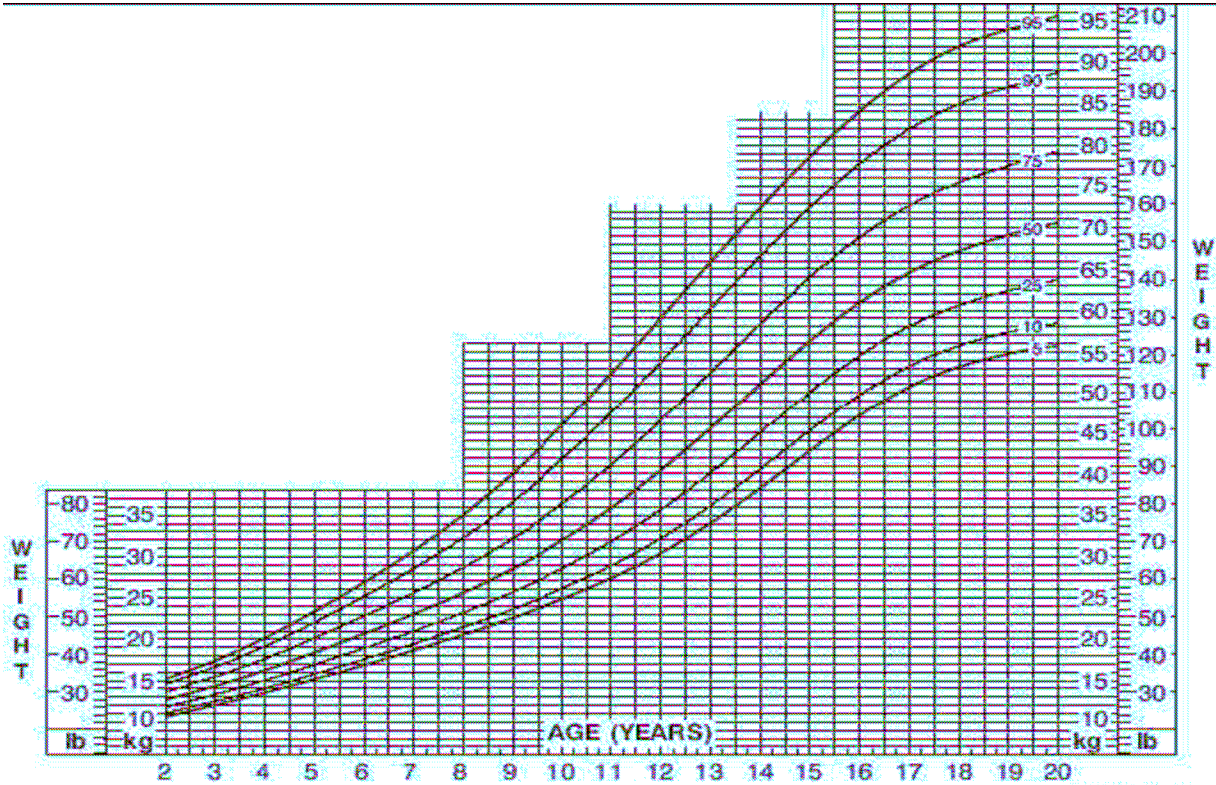
7.2.3 What is the probability of Anthea hiring a blue car? (2)

7.2.4 What is the probability of Anthea hiring an Opel Astra? (2)

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QUESTION 8

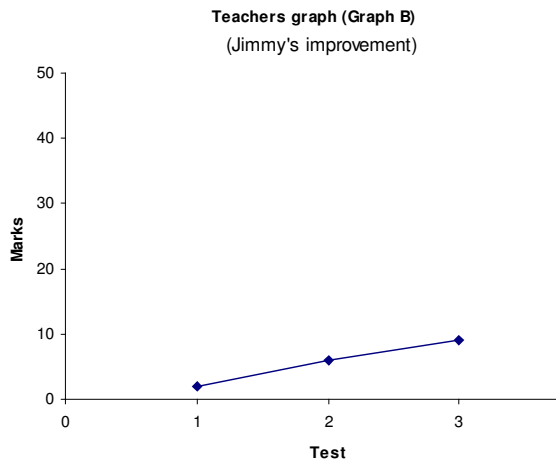
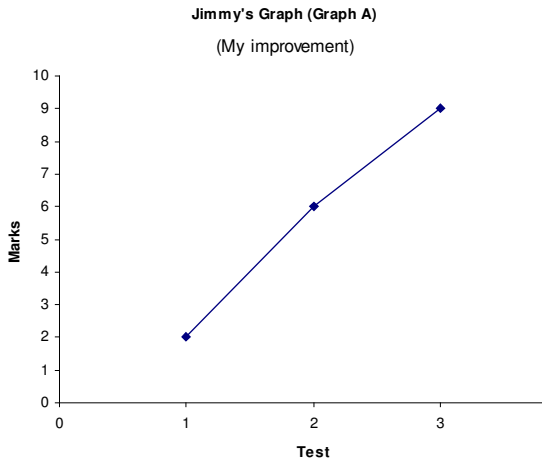
8.1 Trevor’s mother is deeply worried about his health. He does not eat his food and she would like to know if he has the right weight for his age. Study the CDC-weight-for-age percentile chart for boys and answer the questions that follows.



8.1.1 Trevor is currently seven years old. Up and until his last visit to the local clinic, his growth was according to the **fiftieth percentile**. What should his current **weight** be according to the graph? (2)

8.1.2 Trevor’s mother compared his weight to that of his older brother, Zandile. At the age of six years, Zandile weighed 21 kg and currently at the age of nine years, weighs 30 kg On which percentile is his brother’s growth? (2)

8.2 Jimmy wrote three Mathematical Literacy tests during this year. His marks for the tests were $\frac{2}{50}$; $\frac{6}{50}$ and $\frac{9}{50}$. He and his teacher drew the following graphs to show his improvement.

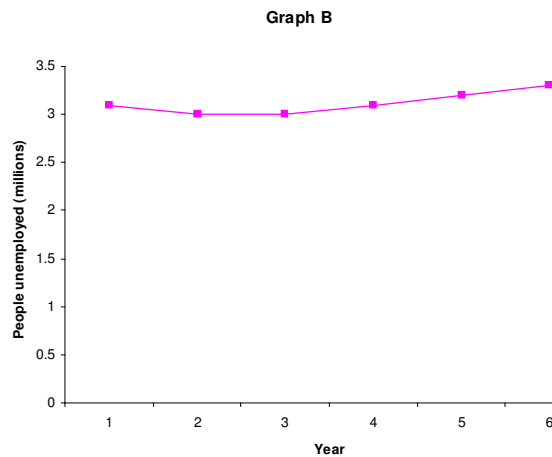
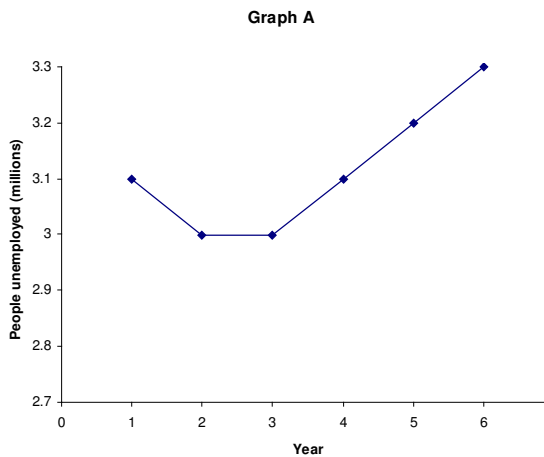


8.2.1 Is there a difference in the data between the two graphs? (1)

8.2.2 Which graph gives the impression that there is a big improvement in Jimmy's test marks? (1)

8.2.3 By how many marks did Jimmy improve from test 1 to test 3? (2)

8.3 The government tries to show the voters that they are keeping the unemployment rate at a reasonably steady level. The opposition tries to show the voters that the unemployment rate is increasing very fast. Study the graphs and answer the questions.



8.3.1 Which graph will the government show the voters and why? (2)

8.3.2 Which graph will the opposition use and why? (2)

[12]

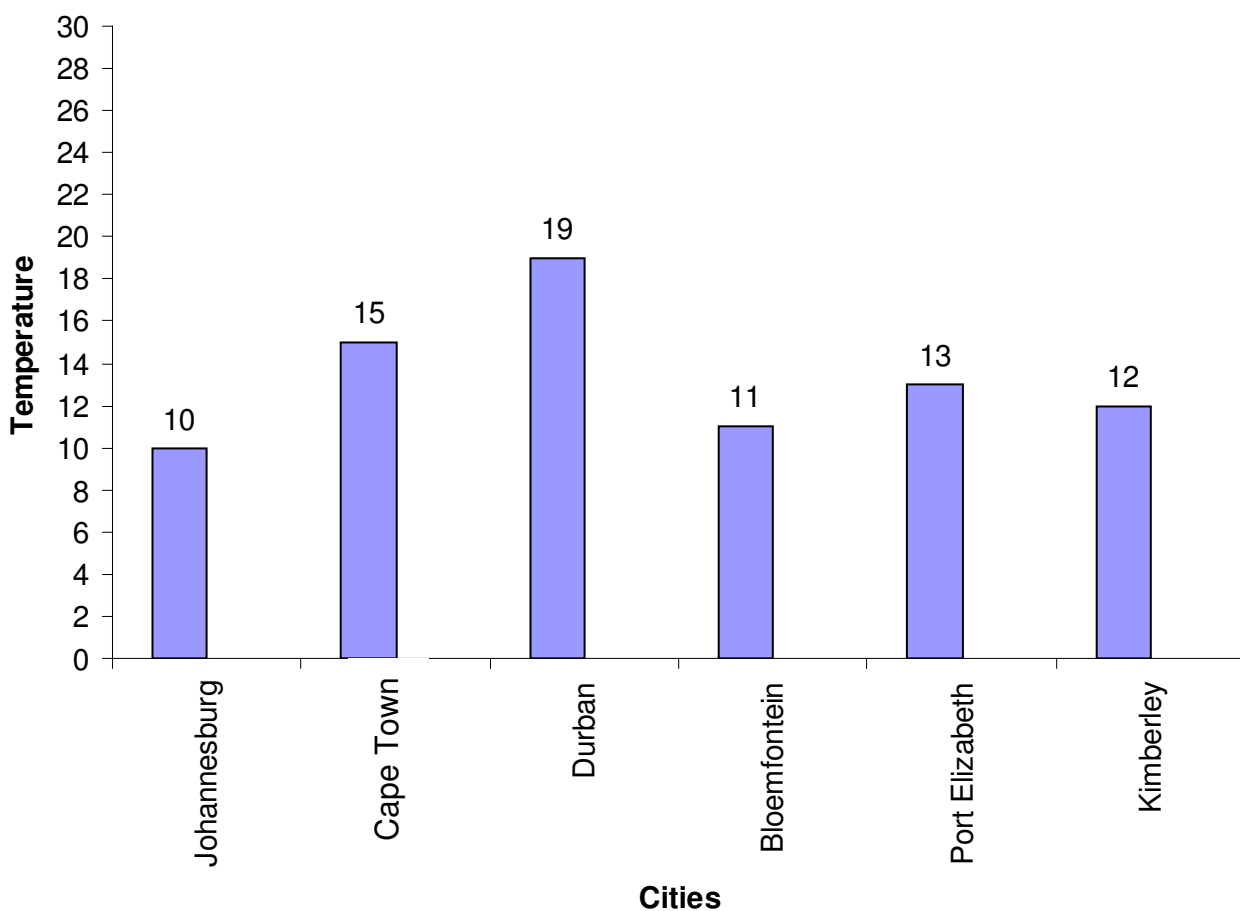
TOTAL:

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ANNEXURE A

QUESTION 2.2.4



ANNEXURE B

QUESTION 6.1.3 en 6.2.2

