



Hillcrest High School

Mathematical Literacy

May 2012

Grade 12

Examiner: Mr S Griffiths

Moderator: Mrs J Leuschke

Instructions to candidates:

This paper consists of 5 pages and this cover sheet.

Answer all questions on the paper provided.

You may not share calculators with anyone during the exam.

Write the name and model of your calculator on the top of your answer paper.

Round all answers off correctly to 2 decimal places unless otherwise stated.

Write your teachers name on the top of your answer paper.

Number your answers correctly according to the numbers used in this question paper.

Show all working out.

Draw double margins.

It is in your best interest to set your work out neatly and legibly.

Start each question on a new page.

Total: 100 marks

Question 1

Simplify the following: (Show your calculations)

1.1 $100 + (2 \times 80) - 50$ (2)

1.2 $(7 \times 7) - (84 \div 2)$ (2)

1.3 $2280 + (1000 \div 5) - (60 \times 8) + 3600$ (2)

1.4 $48 - (6 \times 7) + \sqrt{36}$ (2)

1.5 $\frac{3}{4}$ of 96 (1)

1.6 20% of 1400 (1)

1.7 Write $\frac{78}{120}$ as a decimal fraction. (2)

1.8 Convert R 1 500 into Euros (€) use the conversion R1 = 0.11 € (2)

1.9 Increase R1 250,00 by 24%. (3)

1.10 Write 47% as a common fraction. (1)

[18]

Question 2

Cindy works as a cleaner. She earns R30 per hour and works 8 hours per day from Monday to Friday. On Saturday she works for 5 hours and the rate of pay is 50% more than the normal rate.

2.1 What is her income on Monday? (2)

2.2 What is her income on Saturday? (2)

2.3 How much will she earn per week (Monday to Saturday)? (2)

[6]

Question 3

There are 48 packets of 100g Jelly Tots in the box that Mrs Pienaar bought for the tuck shop.

3.1 What is the total amount of sweets in grams? (1)

3.2 Convert the answer from question 4.1 into kilograms (2)

3.3 If Mrs Pienaar sells 20 packets of Jelly Tots, what is the weight of Jelly Tots left in the box (in Kilograms)? (3)

[6]

Question 4

Mrs Chetty has R 600 to buy presents for her 3 children (Carol, Brenda and Lizzy) in the ratio of 1:3:4 respectively.

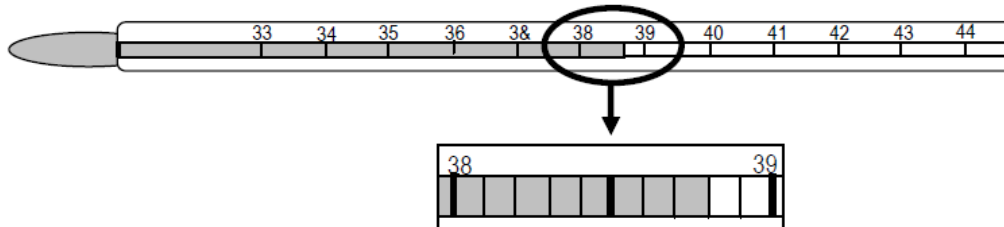
- 4.1 Calculate how much she is going to spend on Carol’s present (2)
- 4.2 Calculate how much she is going to spend on Brenda’s present (2)
- 4.3 Calculate how much she is going to spend on Lizzy’s present (2)

[6]

Question 5

- 5.1 A shop sells muffins for R33.60 per dozen. What is the effective cost of one muffin? (2)
- 5.2 An economy pack of vitamin tablets contains 100 tablets. The recommended dosage is two per day. How many weeks or part thereof will the box last? (3)
- 5.3 A rugby squad consists of 30 players. 40% of the players catch a stomach bug before a big game. How many players are left to play? (2)
- 5.4 Cooking instructions for a Christmas turkey say that it must cook for 20 minutes per 500g, plus 15 minutes extra. How long should a 4kg turkey take to cook? Answer in hours and minutes. (3)

5.5



What is the temperature, in degrees Celsius, shown on the thermometer in the diagram? Answer as accurately as possible.

(2)
[12]

Question 6

The table below is an extract from a letter from Sanlam to Mr Moloke. It shows the amounts that are available on instant loan from Sanlam and the repayment involved.

Dear Mr Moloke, As a valued Sanlam customer, we are pleased to be able to offer you a personal loan at the following rates.				
Loan Amount	24 Months	36 Months	48 Months	60 Months
R 4 000	R 229	R 174	R 147	R 131
R 8 000	R 448	R 338	R 285	R 253
R 16 000	R 864	R 643	R 534	R 470
R25 000	R 1 344	R 1000	R 830	R 730
Fixed Repayments !!!!!!!!				
These loan repayments conveniently include a monthly premium of R 3.95 per R 1000 of the loan and a monthly administration fee of R 9.50 for your optional personal protection plan.				

- 6.1 If Mr Moloke chooses to borrow R16 000 from Sanlam calculate how much he will finally repay if he takes the loan over
- 6.1.1 24 months (2)
- 6.1.2 60 months (2)
- 6.1.3 In general do you advise him to borrow for a longer or shorter time? Give a reason for your answer. (2)
- 6.2 If he chooses the 60 month option. Calculate the interest that he will pay over the period. (4)
- 6.3 The loan repayments include insurance premium and administration fees. If Mr Moloke borrows R16 000, how much of each month's payment is the premium and how much is the administration fee? (4)
- 6.4 Mr Moloke has 2 other options for borrowing the money.
- 6.4.1 An uncle has offered to lend him the R 16 000 for 5 years at 18% per annum, simple interest. What would the total cost of this option be at the end of the 5 years? Use $A = P(1 + in)$ (4)
- 6.4.2 Standard Bank will lend him the R 16 000 at 16% per annum compound interest. Determine the cost of this option. Use $A = P(1 + i)^n$ (4)
- 6.4.3 Would you recommend to Mr Moloke that he should borrow from his uncle or take a loan from Standard Bank. (1)
- [23]

Question 7

Tuberculosis (TB) is a lung disease which is found all over the world. The table below is an extract from the World Health Organisation (WHO) report of 2004.

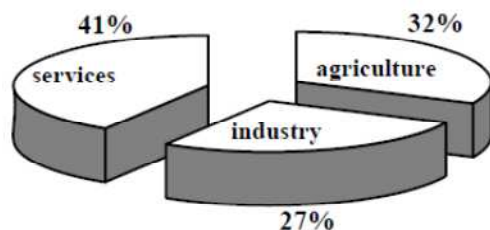
World Health Organisation Statistics 2004 Estimated incidences of Tuberculosis Infection worldwide		
Region	Number of TB cases measured in thousands	Per 100 000 of the population.
Africa	2573	356
The Americas	363	41
Eastern Mediterranean	645	122
Europe	445	50
South East Asia	2967	182
Western Pacific	1925	111
Global	8918	140

- 7.1 How many people were estimated to have TB in Europe in 2004? (1)
- 7.2 Which region had the highest number of cases in total? (1)
- 7.3 What is the range of the infection incidence per 100 000 of the population? (2)
- 7.4 Which region had the highest proportion of its people infected with TB. Explain how you know this from the table. (2)
- 7.5 Complete the sentence:
1 in every _____ people was infected with TB in 2004. (show your working out) (3)
- 7.6 The infection rate in the Americas was 41 per 100 000. How many cases would you estimate for a single South American country that had a population of 2 250 000? (3)
- 7.7 If there was a global reduction of 10% in the number of cases of TB by the end of 2005, how many cases would there have been that year? (3)
- [15]

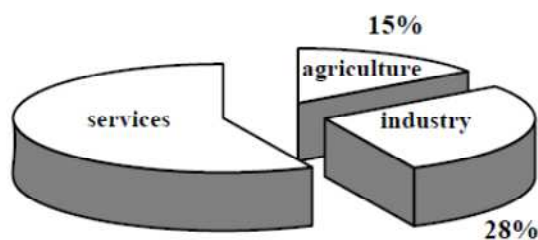
Question 8

India has experienced an impressive economic growth over the past decade. The country's economy has grown from US\$250 billion during the period 1990 to 1991 to US\$1 000 000 billion during the period 2009 to 2010. The two pie charts below show how the contribution to the GDP from the various economic sectors has changed during the period 1990 to 2010.

**Composition of India's GDP
from 1990 to 1991**



**Composition of India's GDP
from 2009 to 2010**



NOTE:

- We measure the economic growth of a country by looking at the gross domestic product (GDP) of the country.
- The GDP is the total value of goods and services produced in a country in one year.
- The GDP represents the monetary value of all goods and services produced within a country's geographical borders over a specified period of time.

- | | | |
|-----|--|------|
| 8.1 | Convert US\$250 billion into millions, if 1 billion = 1 000 million. | (2) |
| 8.2 | During the period 1990 to 1991, what percentage of India's GDP did not come from services? | (2) |
| 8.3 | Calculate the percentage of India's GDP that came from services during the period 2009 to 2010. | (2) |
| 8.4 | During the period 1990 to 1991 India's GDP was US\$250 billion. How much of this (in billions of US\$) came from industry? | (3) |
| 8.5 | Calculate the difference in percentage of the GDP that came from agriculture during the periods 1990 to 1991 and 2009 to 2010. | (2) |
| 8.6 | During the period 2009 to 2010, the GDP was US\$1 000 000 billion. Determine the amount (in billions of US\$) that came from agriculture during this period. | (3) |
| | | [14] |

Total: 100 marks