



Hillcrest High School

Mathematical Literacy Exam

May 2011

Grade 10

Examiner: Mr S Griffiths

Moderator: Mrs J Leuschke

This Exam consists of 4 pages.

There are 2 sections in this exam.

**Hillcrest High
School**

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from library

Instructions to candidates:

Write your teachers name on the top of your answer paper

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

Answer all questions.

Start each section on a new page.

Show all working out.

Calculators may be used.

Draw double margins.

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

Total: 130 marks

Section A

1. Express each of the following as a percentage:

a. $\frac{2}{5}$ (1)

b. 4:7 (2)

c. 0.825 (1)

d. $\frac{1}{4}$ (1)

2. Write the following as fractions in their simplest form:

a. 0,125 (1)

b. 10% (1)

c. 40 minutes of 1 hour (2)

d. $1\frac{1}{2}$ hours of 1 day (2)

3. Simplify without using a calculator

a. $\frac{6x^5}{2x^3}$

b. $\frac{1}{2^{-3}}$

c. $(0,01)^0$

d. $3x^2 \cdot 4x^6$ (7)

4. Write the following numbers in scientific notation:

a. 0,0000489

b. 7 870 000 000

c. 46 664 000 000

d. 0.001 675 (4)

5. Write the following as a ratio and simplify:

a. 3 km to 12 km

b. 1.125 cm to 10 cm (2)

6. Express the following as a rate:

a. 231 km travelled in 3 hours (3)

b. 790,5 km travelled and 85 litres of petrol used. (3)

c. 5 m of material costs R 95 (3)

7. Complete the following tables

Telkom international telephone call rates

Number of minutes	1	2	17	B
Cost	R1,70	R3,40	a	R13,60

(4)

Time taken to paint a house

Number of men	3	5	8	B
Hours worked	20	12	a	6

(4)

8. R2 500 is invested at 7% interest per annum for 4 years. Determine the amount available if:

a. Simple interest is paid. $A = P(1 + in)$ (3)

b. Compound interest is paid. $A = P(1 + i)^n$ (3)

9. Given the following data set: 1 3 4 4 5 6 7 9 11

a. Mean (3)

b. Median (2)

c. Mode (1)

d. Range (2)

10. A survey taken at a hotel indicated the colour of cars arriving as follows:

B = blue R = red S = silver W = white

W R R S W B R S S W S W S R B S B B W S W W
 W R W R W W B B B R S W W S

- a. Copy and complete the following table in your answer booklet.

	Tally	Frequency
Red		
Silver		
Blue		
White		
	Total	

(9)

- b. Draw a pie chart to represent the information above. (10)
- c. Which colour vehicle was the most common? (1)

Section A total: 75 MARKS

Section B

Formulas

$$A = P(1 + in)$$

$$A = P + SI$$

$$A = P(1 + i)^n$$

$$SI = Pin$$

- By how much is 214,3 greater than 175,8? (2)
- How many times is 42,3 greater than 0,09? (2)
- A Sony Play Station 2 normally costs R1 799. At a sale it costs R1 499. Determine the percentage discount correct to 2 decimal places. (3)
- Simplify without using a calculator:
 - $\frac{2^{10} \cdot 2^8}{2^4}$ (2)
 - $(3^2)^3$ (2)
 - $\sqrt[3]{\frac{1}{8}}$ (2)
 - $\sqrt{\frac{4}{9}}$ (2)

5. Write the sum of 9 563 248 and 3 521 974 in scientific notation rounded off to 2 decimal places. (4)
6. Thobeka works part time at Waterfall Super Spar. She earns R 15 per hour.
- If she works 20 hours, how much will she earn? (2)
 - She would like to buy a bicycle of R750. How many hours should she work to earn R750? (2)
7. Divide 45 into the ratio of 2:7 (4)
8. 5 kg of mince cost R 134,95.
- How much will 7 kg cost? (2)
 - How many kg of mince can you buy for R404,85? (2)
9. 8 men lay 2 800 bricks per day.
- How many bricks will 6 men lay in 1 day? (3)
 - How many men would be needed to lay 8750 bricks in 1 day? (3)
10. An amount that was invested at 9,5% simple interest p.a. earned R826,50 interest. Determine the principal amount. (3)
11. Keatin borrows R1 499 to buy a playstation. After 9 months he pays R1 662,02 to settle his debt. What was the simple interest rate? (5)
12. A visitor to the Kruger Park recorded the following numbers of impala seen in 15 days:
25 80 34 26 21 65 28 21 39 21 30 34 21 28 40
- determine:
- Arrange the data in ascending order. (1)
 - The arithmetic mean. (3)
 - The median. (2)
 - The mode. (2)
 - The range. (2)

Section B Total: 55 MARKS

TOTAL: 130 MARKS