Mathematics

PMA

25 Oct. 2011 9.00 am – 11.00 am

REPUBLIC OF RWANDA

RWANDA EDUCATION BOARD (REB)

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Pupil's complete index number

Province/City	District	Sector	School	Pupil

Pupil's names:

Surname.....

Other Names.....

PRIMARY LEAVING NATIONAL EXAMINATION

October 2011

MATHEMATICS

Duration: Two hours

Marks : /100

Instructions

Write in the space provided on this question paper your index number and names in full as written on your registration form.

This paper has two sections **A** and **B**.

SECTION A: Answer **all** questions. **(65 marks)**

SECTION B: Answer only **five** questions. **(35 marks)**

Read each question carefully before answering it.

Answer the questions in the space provided on your question paper.

Show your working clearly. Use a ruler, a pencil and a pair of compasses.

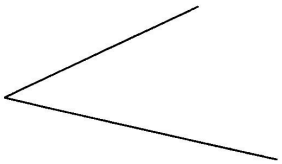
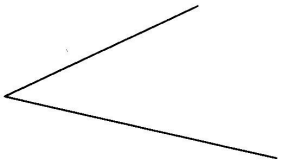
Calculators must not be used in this examination.

SECTION A : ANSWER ALL QUESTIONS IN THIS SECTION. (65 marks)

Do rough work in this column	*Write your answers in this column*
1. Simplify completely : $\frac{4 \times 12 \times 21}{3 \times 18 \times 14}$. **(2)**	
2. Add and correct the answer to 2 decimal places : 0.451 + 1.002. **(2)**	
3. Calculate; 2hours 24 minutes – 1hour 56 minutes. **(2)**	
4. Find the next two numbers in the sequence; 2 , 6 , 18 , 54 , ..., ... **(2)**	

5. Calculate : $\frac{3}{7}$ of 21 . **(2)**	
6. Which of the following fractions is the smallest $\frac{9}{21}, \frac{14}{49}, \frac{21}{147}$? **(2)**	
7. Find the area of the square whose perimeter is 44cm. **(2)**	
8. Decrease 50 litres of milk by 30% . **(2)**	

9. Simplify : $6x^2y^4 \div 3xy^2$	**(2)**	
10. If a = 2 , b = - 1 and c = 3 , find the value of ab + 3c.	**(2)**	
11. Increase 18,000frw in the ratio 5 : 3.	**(2)**	
12. The side of a regular octagon is 6cm. Calculate the perimeter of the octagon .	**(2)**	

13. Write in words 2,450,005frw. **(2)**	
14. 4kg of rice is enough for 3 men. How many Kilograms of rice is enough for 12 men? **(2)**	
15. Find simple interest on 3,000,000frw if the interest rate is 10% per year for 2 years. **(2)**	
16. Use a ruler, a compass and a pencil to bisect the angle below. **(2)** 	

17. The height of a triangle is 7cm and the base is 4cm . Find the area of the triangle.	**(2)**	
18. A piece of wood is in the shape of a semicircle of diameter 70cm. Calculate the perimeter of the wood. $\pi = \frac{22}{7}$.	**(2)**	
19. A boy is 3 years older than his sister. The sum of their ages is 25 years. How old is the sister?	**(2)**	

20. An exercise book costs 200frw. How many **exercise books** can be bought with 2,100frw? **(2)**	
21. Calculate the volume of a cube with side 6.3 cm. **(2)**	
22. A father is visiting his child studying in United States. How many dollars can he buy with 11,000,000frw if 550frw buy one dollar? **(2)**	

23. A bundle of 2,000 Rwanda francs notes are arranged in their serial numbers starting with AR0212461 to AR0212480. How many 2,000 notes are there?	**(2)**	
24. Find the area of a rhombus whose diagonals are 12 cm and 18 cm.	**(2)**	
25. Simplify completely: $\frac{\sqrt{27} \times \sqrt{75}}{5}$	**(2)**	

26. **Musa buys a cow** for 110,000frw. He sells it **at a profit** of 10% after paying a tax of 5% **on the selling** price. What is his selling price?	(3)	
27. 300,000frw is invested at 5% per year compound interest. Find the amount of the investment after 2 years?	(3)	
28. Find the total surface area of rectangular block whose width is 12 cm, length is 19 cm and height 7 cm.		

29. 10kg of beans are mixed with 20kg of maize. 1kg of the mixture costs 160frw. If the cost of 1kg of maize is 140frw, find the cost of 1kg of beans.	**(3)**	
30. 6 men can cultivate a field in 2 days. How many days will 4 men take to cultivate the same field ? All men are working at the same rate.	**(3)**	

SECTION B: ANSWWER ONLY 5 QUESTIONS (35 MARKS)

31. (a)Solve the equation : $\frac{4x-2}{5} = \frac{x}{2} + 2$ **(4)**

(b) Remove the brackets and simplify completely : 3(m – 2n) – 2(m – 4n). **(3)**

32. Simplify completely : **(7)**

$$\frac{\left(\frac{4}{15} \div \frac{8}{45}\right) + \left(\frac{5}{7} \times \frac{14}{15}\right)}{\frac{26}{9}}$$

33. Below are marks scored in a test.

10 5 13 7 13 5 12 10 10
7 9 13 12 13 10 11 9 11

(a) Complete the frequency table below using the above marks. **(3.5)**

Number of pupils x	Frequency f	fx
5		
7		
9		
10		
11		
12		
13		

(b) Find the sum of fx. **(2)**

(1.5)

(c) Calculate the mean mark,

34. (a) Calculate and leave the answer in binary (base two): $1011_{two} + 110_{two}$. **(2)**

(b)Convert 72_{ten} to base three. **(5)**

35. Set A = { a , b , c , d, e , f }
Set B = { the letters in the word **surfaces**}

(a) List the members of set B, **(2)**

(b) List the members of A∩B. **(2)**

(c) List the members of A∪B. **(3)**

38. Find the area of the right angled trapezium below if its perimeter is 24 cm. (7)