

Mathematics

PM

17/07/ 2023 09: 00 AM -11: 00 AM



Pupil's complete index number

Province/ City	District	Sector	School	Level	Pupil	Year
-------------------	----------	--------	--------	-------	-------	------

<input type="text"/>						
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Pupil's names

Surname:.....

Other names:.....

NB: PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR ON THE
REGISTRATION FORM

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2022-2023

MATHEMATICS

Duration: Two hours

Marks: /100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) Attempt **ALL** questions in this paper.
- 3) Read each question carefully before answering it.
- 4) Answer the questions in the space provided in this question paper.
- 5) Show your working clearly. Marks will be given for showing steps.
- 6) All rough work must be done in the space under each question.
- 7) You must use a **blue** or **black** pen.
- 8) You are allowed to use a ruler, and a protractor.
- 9) **You are NOT allowed to use a calculator.**

ATTEMPT ALL QUESTIONS IN THIS PAPER (100 marks)

Do rough work below each question	Show the working steps and final answer in this column
1) Write the following number in words: 59,648,205 	
2) Write the place value of digits 5 and 4 in the number 6,859,174. 	
3) Add vertically $4,985,678 + 2,378,522 =$ 	
4) Use <, > or = to compare the following: a) 260,340 <input type="text"/> 260.340 b) 25,159,000 <input type="text"/> 25159×1000 	

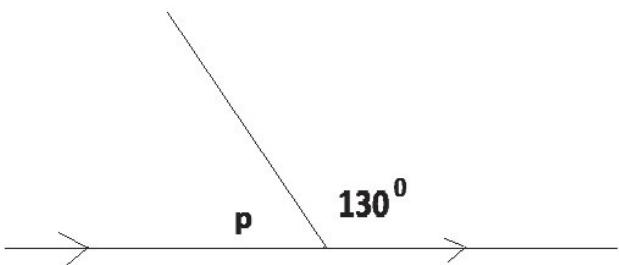
<p>5) Round off 14.9781 to the nearest tenths. (2 marks)</p>	
<p>6) Find the missing two numbers in the sequence below. (a) 3; 8; 13; 18.....;</p>	<p>(2 marks)</p>
<p>7) Define an “obtuse angle”. (2 marks)</p>	
<p>8) Define the term “Probability” of an event. (2 marks)</p>	

<p>9) Convert 0.54 into fraction and simplify the answer completely. (2 marks)</p>	
<p>10) Calculate 20% of 300. (2 marks)</p>	
<p>11) Work out the following integers:</p> <p>a) $(-10) - (-8)$ (1 mark)</p> <p>b) $(+8) \times (-5) =$ (1 mark)</p>	
<p>12) Use quick multiplication to calculate the following:</p> <p>$567 \times 99 =$ (2 marks)</p>	

<p>13) Find $\frac{2}{3}$ of 21.</p>	<p>(2 marks)</p>
<p>14) Write the multiples of 3 between 10 and 17.</p>	<p>(2 marks)</p>
<p>15) Find the LCM of the numbers 36, 84 and 75.</p>	<p>(2 marks)</p>
<p>16) Workout the following:</p> <p>$4.5 \text{ kg} + 13.6 \text{ dag} = \underline{\hspace{2cm}} \text{ kg}$</p>	<p>(2 marks)</p>

17) Find the value of angle **p** in the figure below if **p** is the supplementary angle of 130^0 .

(2 marks)



18) The interior angle of a regular polygon is 108^0 . Find its exterior angle.

(2 marks)

19) Fill in the missing numbers

$$(a) \frac{2}{3} = \frac{8}{\cdot} \quad (1 \text{ mark})$$

$$(b) \frac{4}{5} = \frac{\cdot}{20} \quad (1 \text{ mark})$$

$$\underline{0.1 \times 0.36}$$

20) Workout $\underline{0.09}$ (2 marks)

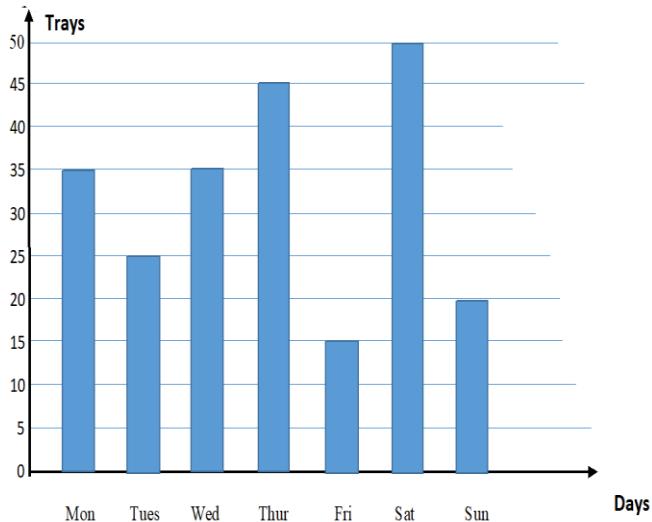
<p>21) The diameter of a circular ring is 21 cm. What is its circumference? Take $\pi = \frac{22}{7}$ (2 marks)</p>	
<p>22) Convert the following units: $14 \text{ m}^3 = \dots \text{dal} = \dots \text{kg}$ (2 marks)</p>	
<p>23) A rectangular box has 65 cm length, 40 cm width and 28 cm height. Calculate the volume of the box. (2 marks)</p>	
<p>24) Anine and Bollen shared 25 sweets in the ratio of 2:3 respectively. How many sweets did each get? (2 marks)</p>	
<p>25) Arrange the following numbers in ascending order: (2 marks)</p> <p style="text-align: center;">$\frac{3}{10}$</p> <p>5; 0.56, 2; $\frac{3}{10}$, 0.09</p>	

<p>26) After increasing a number by 15%, it became 34,500. What is the number? (3 marks)</p>	
<p>27) Workout $\left(\frac{3}{5} + \frac{2}{5}\right) \div \frac{1}{2} =$ (3 marks)</p>	
<p>28) Solve the following equation: $4 - x = 5x - 8$ (3 marks)</p>	
<p>29) A private school has 617 pupils. If one pupil pays 152 800Frw in school fees per term, how much money do they pay altogether in one term? (3 marks)</p>	

<p>30) Electric poles are fixed along one side of a 16 km section of a road. This was to light the road. The poles are placed 10 m apart from each other. How many poles are fixed?</p> <p style="text-align: right;">(3 marks)</p>	
<p>31) A father earns a salary of 250 000 Frw in a month. He spends his money as follows:</p> <p>Rent: 30 000 Frw School fees: 55 000 Frw Food: 35 000 Frw Transport: 15 000 Frw.</p> <p>He saves the remaining money.</p> <p>a) How much does he spend in total each month?</p> <p style="text-align: right;">(3 marks)</p> <p>b) How much does he save each month?</p> <p style="text-align: right;">(2 marks)</p> <p>c) Why do you think it is important for the father to save?</p> <p style="text-align: right;">(2 marks)</p>	
<p>32) Bus n°1 travelling at 60 km/h left Kigali at 8:30 a.m. Bus n°2 travelling at 80 km/h followed it after 1 hour.</p> <p>a) When did Bus n°2 overtake Bus n°1?</p> <p style="text-align: right;">(5 marks)</p> <p>b) What distance had both Buses covered?</p> <p style="text-align: right;">(2 marks)</p>	

<p>33) A business woman borrowed 480,000Frw from UMURENGE SACCO for 2 years. The interest rate offered was 12% per year.</p> <p>a) How much interest did she pay back? (4 marks)</p> <p>b) What amount did she pay to UMURENGE SACCO? (3 marks)</p>	
<p>34) A mixture of yellow maize flour and white maize flour costs 400 Frw per kg. 20 kg of yellow maize flour costs 450 Frw per kg and the white maize flour costs 350Frw per kg. Find the kilograms for the white maize flour. (7 marks)</p>	

35) Study the diagram below which shows the number of eggs harvested by a Company (in trays) for a whole week from Monday to Sunday.



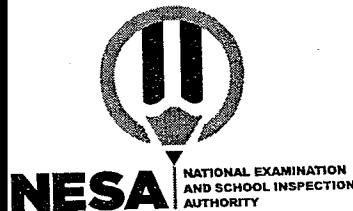
- a) How many days are shown on the graph? **(1 mark)**
- b) Find the number of trays collected in the whole week. **(1 mark)**
- c) On which day did the company collect the smallest number of trays of eggs? **(1 mark)**
- d) On which day did the company collect the biggest number of trays of eggs? **(1 mark)**
- e) On which day did the company collect the same quantity of trays? **(1 mark)**
- f) If one tray of eggs was sold at 4500Frw, how much money did the company get from eggs in a week? **(2 marks)**

END

Mathematics

PM

18/07/ 2022 09: 00-11: 00 AM



Pupil's complete index number

Province/ City	District	Sector	School	Level	Pupil	Year
<input type="text"/>						

Pupil's names

Surname:.....

Other names:.....

NB: PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR ON THE
REGISTRATION FORM

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2021-2022 MATHEMATICS

Duration: Two hours

Marks: /100

INSTRUCTIONS

- 1 Do not open this question paper until you are told to do so.
- 2 Attempt **ALL** questions in this paper.
- 3 Read each question carefully before answering it.
- 4 Answer the questions in the space provided on this question paper.
- 5 Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 6 You must use a **blue** or **black** pen.
- 7 You are allowed to use a ruler, and a protractor.
- 8 **You are NOT allowed to use a calculator.**

ATTEMPT ALL QUESTIONS IN THIS PAPER (100 marks)

Do rough work below each question	Show the working steps and final answer in this column
1) Write the following number in figures: Nine million nine thousand eighty seven. (2 marks)	
2) Write the place value of digits 7 and 1 in the number 180,493.27 (2 marks)	
3) Arrange the following numbers from the lowest to the highest $\frac{2}{3}$; -1; 0.5 ; 100;-100;0.82;-1; 5 (2 marks)	
4) Convert 432,000sec=....days ...hours (2 marks)	
5) Find the next two numbers in the following sequence 3; 9; 27; 81;; (2 marks)	
6) Use the divisibility test method to check if 23,760 is divisible by 11. (2 marks)	
7) Solve $4x - 8 = 10x - 20$ (2 marks)	
8) Workout $\frac{3}{4}x\left(\frac{2}{5} + \frac{3}{7}\right) =$ (2 marks)	

9) Calculate $4.5\text{kg} + 113\text{dag} = \dots \text{kg}$ (2 marks)	
10) 4 % of the learners in P5 are boys. If there are 45 boys in the class, how many learners are in the class? (2 marks)	
11) Simplify $\frac{\sqrt{225} + \sqrt{169}}{\sqrt{16}} =$ (2 marks)	
12) Calculate the sum of 524,321 and 17,674,329. (2 marks)	
13) One Mathematics book costs 5,200Frw. How much do 8 similar books cost? (2 marks)	
14) Multiply 896,327 by 121. (2 marks)	

15) Use quick multiplication to calculate $625 \times 99 =$	(2 marks)
16) Workout the following without using a number line a) $(-6) + (+2) =$ b) $(+12) \times (-8) =$	(1 mark) (1 mark)
17) Find the greatest common Factor (GCF) of 24; 36 and 40.	(2 marks)
18) A class has 56 pupils. There are 14 boys in the class. Find the ratio of boys to girls in the class.	(2 marks)

19) Gakire has 12 notes of 2,000Frw, 20 notes of 5,000Frw, 15 notes of 500Frw and 10 coins of 100Frw. Calculate the total amount of money that Gakire has.

(2 marks)

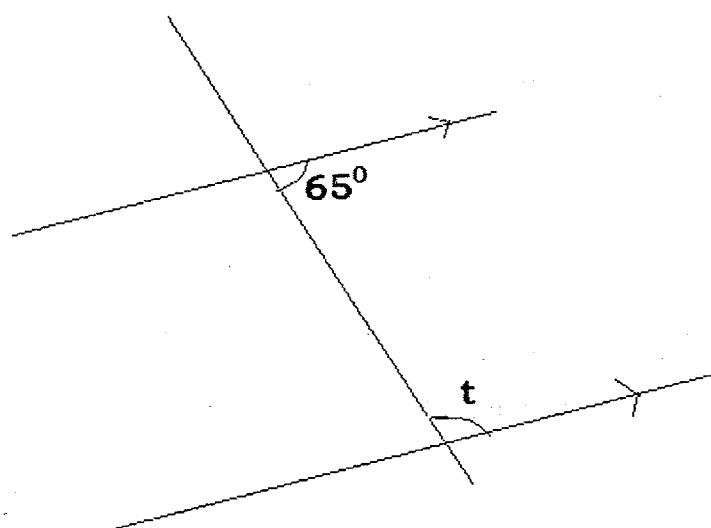
20) Round off 4,620,850 to the nearest hundred thousands.

(2 marks)

21) Simplify $5^6 \times 5^2 \div 5^3 =$

(2 marks)

- 22) Find the size of angle t in the figure below.
(2 marks)



- 23) Convert $\frac{10}{16}$ into a decimal number.
(2 marks)

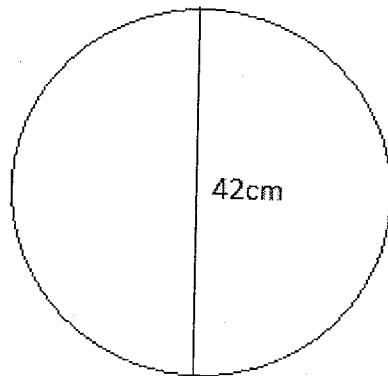
- 24) During COVID-19 Lockdown, a certain cell volunteers distributed equally 7,827,831 kg of beans among 333 families. How many kilograms did each family get? **(2 marks)**

25) Use measurement table to convert the following:

a) $26dm^3 = \dots \dots hg$ (1 mark)

b) $9,700\ell = \dots \dots m^3$ (1 mark)

26) Calculate the circumference of the figure below
(use $\pi = \frac{22}{7}$) (3 marks)

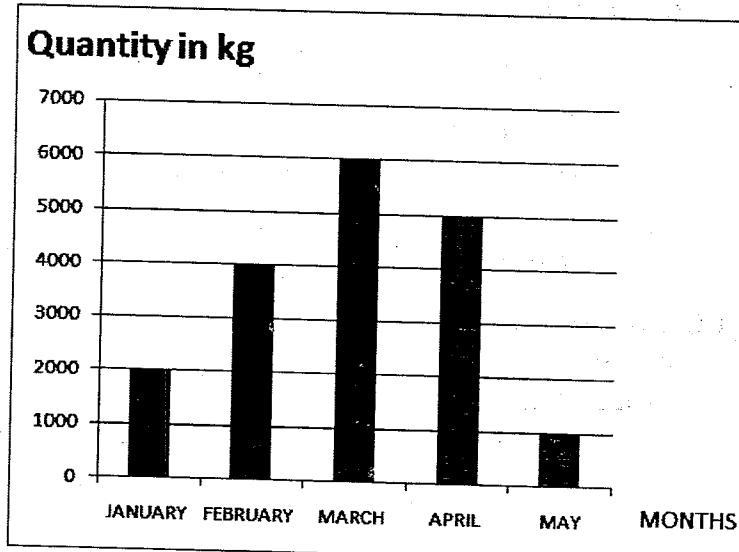


27) Electric poles are fixed 20 metres apart. Find the distance from the first to 101th pole.

(3 marks)

<p>28) A man covered 120 km of a journey. This is only $\frac{3}{4}$ of the whole journey. Calculate the total distance covered for the whole journey. (3 marks)</p>	
<p>29) A trader bought a Radio at 950,000 Frw. He later sold it to a customer at 1,250,000Frw. What was his percentage profit? (3 marks)</p>	
<p>30) The LCM of two numbers is 40. One of the numbers is 20. If their GCF is 5, find the second number. (3 marks)</p>	
<p>31) (a) The area of a rectangular table is $160m^2$. If its width is 8m. Find the length of the table. (3 marks)</p> <p>(b) A wooden box has a volume of $9,000,000cm^3$. If Its length is 2 m and width 1.5 m.</p> <p>(i) Find its area. (2 marks)</p> <p>(ii) Find its height. (2 marks)</p>	

32) Study the graph below which shows the potatoes in kg sold at a shop in 5 months and answer the questions that follow.



- (a) In which month did the shopkeeper sell the highest quantity of potatoes? **(1 mark)**
- (b) In which month did the shopkeeper sell the smallest quantity of potatoes? **(1 mark)**
- (c) Find the total kilograms of potatoes sold in all the five months **(2 marks)**
- (d) If one kg of potatoes costs 550Frw, how much money did the shopkeeper get from the sale of potatoes in all five months? **(3 marks)**

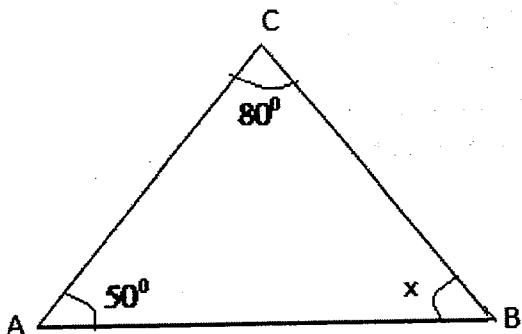
33) A P6 pupil was sent to the market with 30,000frw to buy the items shown in the table below.

a) Complete the table.

(5 marks)

Items	Price/cost per item	Total amount
3kg of beans /Kg	3,000frw
6kg of sugar	1,500frw/kg
5kg of meat	... /Kg	15,000frw
..... Loaves of bread	800frw/loaf	2,400frw
Total expenditure	 Frw
b) Find the balance		(2 marks)
Balance	Frw

34) (a) Find the value of angle x in the triangle CAB below. (3 marks)



(b) Two Vehicles A and B moved towards each other. They started moving at 9:00 am and met at 11:00 am. Their speeds were 60 km/hr and 55 km/hr respectively. What distance had each covered by the time they met? **(4 marks)**

35) (a) By using the following digits 8; 0; 5; 7; 1; 6. Write the biggest whole number formed by these digits. **(2 marks)**

(b) A businesswoman has 300 kg/600kg of mixed beans which she sells at 280Frw/kg. If the mixture contains 200kg of the first type which cost 360Frw/kg. Find the price of one kg of the second type. **(5 marks)**

END

Mathematics

PM

12/07/ 2021 09: 00-11: 00 AM



NESA NATIONAL EXAMINATION AND SCHOOL INSPECTION AUTHORITY

Pupil's complete index number

Province	District	Sector	School	Level	Pupil	Year
/City						

Pupil's names

Surname:

Other names:

NB: PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR ON
THE REGISTRATION FORM

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2021

MATHEMATICS

Duration: Two hours

Marks:

/100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) **This paper consists of 12 pages and 35 questions. Before starting, check if all pages and all questions are there and are arranged in ascending order.**
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided on this question paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You must use a blue or black pen.
- 8) You are allowed to use a ruler, and a protractor.
- 9) **You are NOT allowed to use a calculator.**

Do rough work below each question.**Show the working steps and final answer in this column.**

- 1) Write the following number in words
29 802 604

(2 marks)

- 2) Write the place value of digit 6 in the number
4567891

(2 marks)

- 3) Round off 86948 to the nearest thousands
(2 marks)

- 4) Workout without using a number line.
a) $(+4) \times (-8) =$ (1 mark)
b) $(+12) : (+3) =$ (1 mark)

5) Find the Least Common Multiple of numbers 6;12
and 18
(2 marks)

6) Workout $\left(\frac{2}{3}x\frac{15}{4}\right):\frac{5}{6} =$
(2 marks)

7) Calculate the value of $3x^2y - xz$ if $x = -2$, $y = -1$ and
 $z = 4$
(2 marks)

8) Calculate the price of 12kg of beans if 6kg cost
2760frw.
(2 marks)

9) Decrease 8000 by 14%

(2 marks)

10) Convert $9\frac{2}{5}$ into decimals.

(2 marks)

11) Workout $23hg + 50kg = \dots g = \dots mg$

(2 marks)

12) Simplify

$$9a^4b^3 \div 3a^2b =$$

(2 marks)

13) Find the two missing fractions in the sequence below:

$$\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \dots, \dots$$

(2 marks)

14) Use quick arithmetic to work out the following:

$$84 \times 25 =$$

(2 marks)

15) Express 72 as a product of its prime factors.

(2 marks)

16) Subtract : $3\frac{1}{4} - 2\frac{3}{8} =$

(2 marks)

17) A school library has 120 shelves with 98 books each. How many books are there in the library?

(2 marks)

18) Eric has 5 notes of 2000 Frw, 2 notes of 5000 Frw and 20 notes of 500 F. Calculate the total amount of money he has.

(2 marks)

19) Find the circumference of a circular garden whose radius is 24cm (use $\pi = 3.14$) (2 marks)

20) Find the number whose square root is 16.
(2 marks)

21) Find the complement of 60° .
(2 marks)

22) Evaluate $5^2 + 4^4 =$
(2 marks)

23) Convert 18000sec = ...hours.....mn
(2 marks)

24) Workout $\frac{\sqrt{400} + \sqrt{625}}{\sqrt{100}} =$
(2 marks)

25) Solve the equation
 $(2x-1) = 5(x-2)$
(3 marks)

26) The height of the right angle triangle is 3cm and its hypotenuse is 5cm .

(a) Calculate the length of the 3rd side of the triangle in cm **(2 marks)**

(b) Calculate the area of the triangle. **(1 mark)**

27) 20% of a number is 60. What is the number?

(2 marks)

28) In a class there are 60 children. The ratio of boys to girls is 2:3 respectively.

a) How many boys are in the class? **(2marks)**

b) How many girls are in the class? **(1 mark)**

29) Mary spends 125,000FRW on buying food. This is 5% of her monthly salary. How much is her salary?

(3 marks)

30) A car took 6 hours to cover a distance. It moved at a speed of 90 km/hr. Calculate the distance it covered. **(3 marks)**

31) a) Find the interior angle sum of a pentagon
(3 marks)

b) How many sides does a hexagon have?
(1 mark)

c) Find the centre angle of a regular hexagon.
(3 marks)

32)a) An amount of money gained an interest of 144,000FRW . It was invested for 9 years. If the simple interest rate is 6% , calculate the principal amount. **(5marks)**

b) Convert 8.09 into a fraction and show your working. **(2marks)**

33) a) Kamana bought a bicycle at 60000frw and after a short period of time sold it at 50000frw.

(i) Calculate his loss. **(1 mark)**

(ii) Calculate the percentage loss. **(2 marks)**

b) Calculate the simple interest of 48000000frw at 6% rate for three months. **(4 marks)**

- 34) Fifi mixed 4kg of yellow maize flour with an unknown quantity of white maize flour. The cost price of the mixture was 800Frw per kg.

Yellow maize flour cost 900 Frw per kg and the white maize flour costs 700 Frw per kg when not mixed

Find the quantity in kilograms of the white maize flour used.

Show your working.

(7 marks)

35) The data below shows the marks obtained (out of 100) by pupils in an English test:

88 56 56 76 23 10 89 90 43 23 50 12
54 76 23 22 43 54 29 74 66 43 12 64

a) Represent this data in a table of two columns
(Column 1: Marks, Column 2: Number of
pupils obtaining those marks). **(3 marks)**

b) How many pupils did the test?
(1mark)

c) How many pupils scored 76% marks?
(1mark)

(d) How many pupils got less than 50% marks?
(1mark)

(e) What was the highest mark scored?
(1mark)

BLANK PAGE

Mathematics

PM

4/11/2019

9:00 AM – 11:00 AM



Rwanda Education Board

Pupil's complete index number

Province/ District Sector School Pupil Year

City

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

Pupil's names

Surname:

Other names:

NB : PUPIL'S INDEX NUMBER AND NAMES

**MUST BE WRITTEN AS THEY APPEAR ON THE
REGISTRATION FORM.**

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2019

MATHEMATICS

Duration: Two hours

Marks:

/100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) *This paper consists of 12 pages and 35 questions. Before starting, check if all pages and all questions are there and arranged in ascending order.*
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided in this paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You are allowed to use a ruler, and a protractor.
- 8) **You are NOT allowed to use a calculator.**
- 9) You must use a **blue** or black **pen**.

ANSWER ALL QUESTIONS IN THIS PAPER (100 marks)

Do rough work below each question	Show the working steps and final answer in this column
1) Write the biggest number of 8 digits formed by the digits below: 2;3;8;5;4;7;1;9	(2marks)
2) Arrange the following integers from the lowest to the highest. -8;-1;+7;+1;+2;-4	(2marks)
3) Write the place value of digit 1 in the following number: 18,526,739	(2marks)
4) Write in words the following number: 277,818,599	(2marks)
5) If $b = 4$, calculate: $48 - (15 + b) =$	(2marks)
6) Find 5% of 45000Frw	(2marks)
7) Solve for x in the following equation: $2(x-1) = x-3$	(2marks)

8) Round off 76,948 to the nearest thousands (2marks)	
9) Express the following fraction as a decimal to 2 decimal places. $2\frac{5}{6} =$	(2marks)
10) Calculate: $4^3 - \sqrt{100} =$	(2marks)
11) Workout the calculation below and simplify the answer. $\frac{4.28 + 63.12}{0.02} =$	(2marks)
12) Find the next two numbers in the digits below: 2; 5; 11; 23; —; —	(2marks)

13) Workout the fraction below and simplify the answer.

$$\left(\frac{1}{5} + 3\frac{2}{6}\right) : \frac{8}{6} =$$

(2marks)

14) 10,500 English books are shared among 50 students.
Find the number of books shared by each student.

(2marks)

15) Calculate: $(9) \times (-6) =$

(2marks)

16) Write in words the following number:

21,892,045

(2marks)

17) Evaluate: $6^6 - 4^4 =$

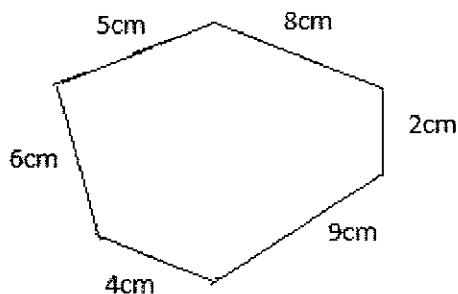
(2marks)

18) Find GCF or Greatest Common Factor of 120 and 96

(2marks)

19) Find the size of the exterior angle of a regular polygon if its interior angle is 80° . **(3marks)**

20) Find the perimeter of the figure below



(2marks)

21) A man has 12 notes of 5000frw; 20 notes of 1000frw and 40 notes of 500frw. Find the total amount of money the man has. **(2marks)**

22) There are 24 hours in one day, and there are 60 minutes in one hour. How many minutes are there in one day? **(2marks)**

23) Calculate $3\frac{2}{5} + \frac{3}{4} =$ **(2marks)**

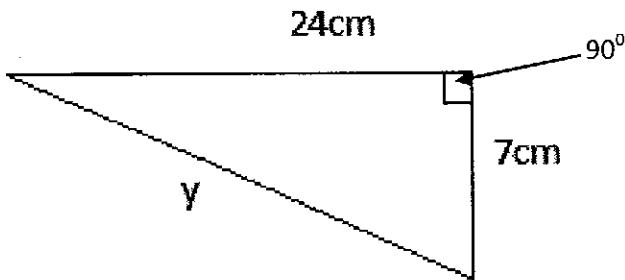
24) Find the circumference of a circular garden whose radius is 36cm (use $\pi=3,14$) **(2marks)**

25) Write the following in descending order:

$0.05; 0.12; \frac{1}{2}; 0.55; \frac{2}{5}$ **(2marks)**

26) Find the number whose square roots is 12. **(2marks)**

27) In the figure below:



(a) Find the length of the side marked by the letter y .
(1mark)

(b) Calculate the area of the figure above.
(2marks)

28) If an English Exam started at 8:30 a.m and took $3\frac{1}{2}$ hours, at what time did it end?
(3marks)

29) Joana spends 160,000FRW on school fees. This is 10% of her monthly salary. How much is her salary?

(3marks)

30) A water tank has a radius of $4,4m$ and a height of $8m$. Find its volume. (use $\pi = 3,14$) **(3marks)**

31) a) A shopkeeper borrowed $240,000FRW$ for 6 months at an interest rate of 20% per annum .

(i) Calculate the interest he should pay after the 6 months **(2marks)**

(ii) Calculate the total amount of money he will pay to the bank. **(2marks)**

b) Benita bought a radio at $45,000frw$ and sold it at $32,000frw$

(i) Find the loss Benita made. **(1mark)**

(ii) Calculate the percentage of the loss **(2marks)**

32) A woman went to the market and bought the following items:

10kg of rice at 1,000Frw/1kg

20kg of meat at 3,000Frw/1kg

5litres of oil at 1,500Frw/1litre

15kg of Irish potatoes at 300Frw/1kg

(i) Complete the table below showing the budget she spent
(5marks)

Item n°	Unit price	Quantity	Total amount
1.Rice	1000Frw	10kg	1,000frw x 10= 10,000 frw
2.
3.
4.
			Total =..... Frw

(ii) On what item did she spend most money? Why?

(1mark)

(iii) What was her balance after spending the money if she had 92,000Frw in her pocket before buying? **(1mark)**

33) Alan left City A for City B in his car at 10:00 a.m moving at a speed of 30km/hr. At the same time Norah left city B for City A in a new car at a speed of 15km/hr. The distance from City A to B is 480km.

(i) At what time did the two drivers meet? **(3marks)**

(ii) What distance had Alan covered before meeting Norah?
(2marks)

(iii) What distance had Norah covered before meeting Alan?
(2marks)

34)

a) If a Kinyarwanda examination at a certain school started at 8.30 a.m and ended at 11 a.m, how long did the examination take? **(3marks)**

b) Find the surface area of a cube with a side length of 3 cm. **(2marks)**

c) If the total surface area of a cube equals 96 cm^2 , what is the length of one side of the cube? **(2 marks)**

35) The table below shows how primary six (P6) class scored in Kinyarwanda Test out of 100 marks.

Marks	50	20	45	30	70	65
Frequency	2	4	6	7	5	9

a) Complete the table below: (2marks)

Marks(x)	Frequency(f)
50	2
20	4
45	6
30	7
70	5
65	9
$\sum x = \dots$	$\sum f = \dots$

b) Answer the following questions

(i) How many pupils are in P6? (1mark)

.....

(ii) What is the mode marks? (1mark)

.....

(iii) Find the modal frequency (1mark)

.....

(iv) Calculate the range marks (1mark)

.....

(v) Find the mean marks? (1mark)

.....

MATHEMATICS

PM

12/11/2018 9AM - 11AM



Pupil's complete index number

Province/ District Sector School Pupil Year
City

<input type="text"/>						
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Pupil's names

Surname:

Other names:

NB: PUPIL'S INDEX NUMBER AND NAMES **MUST** BE WRITTEN AS THEY APPEAR ON THE REGISTRATION FORM.

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2018

MATHEMATICS

Duration: Two hours

Marks: /100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) **This paper consists of 12 pages and 35 questions. Before starting, check if all pages and all questions are there and are arranged in ascending order.**
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided in this question paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You must use a **blue or black** pen.
- 8) You are allowed to use a ruler and a protractor.
- 9) You are **NOT** allowed to use a calculator.

ANSWER ALL QUESTIONS IN THIS PAPER (100 MARKS)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.	GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.
1) Subtract: $867,523 - 374,238$. (2marks)	
2) Test whether 298 is divisible by 9. (2marks)	
3) If $a + b = 20$ and $b = 8$, find the value of a . (2marks)	
4) Write in figures: Four hundred forty five million, five hundred eight four thousand and four hundred nine. (2marks)	
5) Round off 412928.92 to the nearest whole number. (2marks)	
6) What is the place value of 7 in the figure 75 325 961? (2marks)	

7) Work out: $3 \times (15+5)-7 =$ 	(2marks)
8) How many millilitres of water does a bottle of five litres have? 	(2marks)
9) Find the value of $-3a-4b$ if $a=2$ and $b=-3$. 	(2marks)
10) Arrange in ascending order $\frac{3}{10}; \frac{5}{12}; 0.75; \frac{2}{15}$ 	(2marks)
11) Solve for x the following equation: $x - 7 = -2x - 1$ 	(2marks)
12) Work out $\frac{0.72 \times 0.24}{0.48} =$ 	(2marks)

13) Simplify the expression:

$$2(a - 3) + 4b - 2(a - b - 3) + 5 \quad (2\text{marks})$$

14) The interior angle of a regular polygon is 145° . Find the size of the exterior angle of the polygon. **(2marks)**

15) Find the area of a regular pentagon whose side is 4cm and apothem is 2cm. **(2marks)**

16) Calculate $3\frac{5}{7} + 2\frac{2}{3} =$ **(2marks)**

17) The circumference of a circle is 314cm. Find its diameter in cm (use $\pi = 3,14$). **(2marks)**

18) If two numbers have a difference of 381 and a quotient of 4.
Determine these numbers. **(2marks)**

<p>19) A man's step is 80cm. How many such steps can he make in a distance of 40dm? (2marks)</p>	
<p>20) Share 170 notebooks among 9 pupils. Give your answer as a mixed fraction. (2marks)</p>	
<p>21) A motorcyclist rides 15km in one hour. How many hours does he take to ride 45km? (2marks)</p>	
<p>22) Find the area of a circle whose diameter is 28m. (2marks)</p>	
<p>23) Given that the total number of pupils in P6 class is 32 and the difference between the number of boys and that of girls in the class is 10.</p> <p>(a) Calculate the number of boys in the class. (1mark)</p> <p>(b) Calculate the number of girls in the class. (1mark)</p>	

24) Calculate 12% of 280,000. **(2marks)**

25) Dora has 10,000Frw. She took $\frac{3}{5}$ of that money to buy shoes. Calculate the sum of money she spent on shoes. **(2marks)**

26) A man's salary increased in the ratio 2:3. If he was earning 70,000Frw. Calculate his new salary. **(3marks)**

27) The cost of a Science book and a bag is 75,000Frw altogether. The book costs 15,000Frw more than the bag.

Find:

(a) The cost of the bag. **(2marks)**

(b) The cost of the book. **(2marks)**

28) A woman deposited 600,000 Frw in the Bank for 2 years at an interest rate of 4% per year.

(a) Calculate the interest she got after the second year. **(2marks)**

(b) Calculate the total amount she got after 2 years. **(1mark)**

29) (a) Name the regular polygon which has 12 sides. **(1mark)**

(b) What is the interior angle of a regular octagon? **(1mark)**

30) The area of a rectangle is 15 square decimeters and its length is 50 centimeters. Find the width of the rectangle. Give your answer in centimetres. **(3marks)**

31) Manu, Ally and Eden are friends. They contributed money for paying the insurance of the old people in their cell in 3 to 4 to 5 parts respectively. Manu contributed 40,000Frw.

(a) How much did Ally contribute? **(3marks)**

<p>(b) How much did Eden contribute? (3marks)</p> <p>(c) Calculate the total contribution of the three members. (1mark)</p>	
<p>32) In a Conference hall, $\frac{2}{6}$ of seats are filled by women, $\frac{1}{5}$ by men and $\frac{1}{3}$ by children.</p>	
<p>(a) What fraction of the conference hall is occupied? (2marks)</p>	
<p>(b) What fraction of the conference hall is not occupied? (1mark)</p>	
<p>(c) How many people are in the conference hall if the whole conference room contains 9000 seats? (1mark)</p>	
<p>(d) Calculate the number of men who are present. (1mark)</p>	
<p>(e) Calculate the number of women who are present. (1mark)</p>	
<p>(f) Calculate the number of children who are present. (1mark)</p>	

33) (a) What is the volume of a cylinder which is 4cm high and whose circular face has a diameter of 2cm? **(2marks)**

(b) Three friend Lorina, Lariga and Lona contributed to start a business. Lorina paid $\frac{4}{10}$ of the total contribution, Lariga

contributed $\frac{3}{10}$ of the total contribution.

(i) What fraction did Lona contribute? **(2marks)**

(ii) If Lona contributed 60,000 Frw, what was their total contribution? **(3marks)**

34) The table below shows how primary four (P4) class scored in English Test out of 100.

Marks	50	30	40	42	80	70
Frequency	2	5	8	10	6	4

(a) Complete the table across with the above information (the first row was completed for you). **(3marks)**

(a)

Marks(x)	Frequency(f)
30	5
$\sum x = \dots$	$\sum f = \dots$

(b) How many pupils are in P4? **(1mark)**

(c) Find the highest marks in the class.
(1mark)

(d) What is the mark obtained by many students?
(1mark)

(e) How many pupils obtained the lowest marks?
(1mark)

35) A bicyclist covered a journey from Centre A to Centre B in 3hours at a speed of 20km/h and he took 1hour to return through the same distance.

(a) Calculate the distance from A to B.
(2marks)

(b) Calculate the total distance of the whole journey.
(1mark)

(c) Calculate the total time used to cover the whole journey. **(2marks)**

(d) Calculate the average speed used for the whole journey.
(Write the answer in m/s). **(2marks)**

Mathematics

PM

01 / 11 / 2016 09: 00-11: 00 AM



Pupil's complete index number

<i>Province</i>	<i>District</i>	<i>Sector</i>	<i>School</i>	<i>Pupil City</i>
-----------------	-----------------	---------------	---------------	-----------------------

<input type="text"/>					
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Pupil's names

Surname:

Other names:

**NB : PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR
ON THE REGISTRATION FORM.**

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2016

MATHEMATICS

Duration: Two hours

Marks: /100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) ***This paper consists of 12 pages and 35 questions. Before starting, check if all pages and all questions are there and are arranged in ascending order.***
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided on this question paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You must use a blue or black pen.
- 8) You are allowed to use a ruler, and a protractor.
- 9) **You are NOT allowed to use a calculator.**

ANSWER ALL QUESTIONS IN THIS PAPER. (100 MARKS)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.	GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.
1) Round off 594,740 to the nearest thousand. (2marks)	
2) Write the following number in words: 540,032 (2marks)	
3) Compare the numbers below, using the sign <, > or = (2marks) $\frac{5}{11} \quad \boxed{} \quad 0.677$	
4) Find the missing number to make the statement correct: (2marks) $39 \times (82 + \boxed{}) = 39 \times 100$	
5) Add: $2.4263 + 3.02 =$ (2marks)	
6) Fill in the next two missing numbers: 2; 4; 16; ; (2marks)	

<p>7) Express 5% as a fraction in the lowest terms. (2marks)</p>	
<p>8) Evaluate $\frac{a^2 \div b}{c - d}$, if a = 3; b = -3; c = 2 and d=5. (2marks)</p>	
<p>9) Convert:</p> <p>(a) 43,000g = kg (1mark)</p> <p>(b) 5.5 tons = kg (1mark)</p>	
<p>10) Find the circumference of a circle whose radius is 5cm. (Use $\pi=3.14$) (2marks)</p>	
<p>11) Express the number $1\frac{1}{5}$ as a percentage. (2marks)</p>	

12) Use a quick multiplication to calculate the product 84×49 . **(2marks)**

13) If angles k and 70° are supplementary, find the size of angle k. **(2marks)**

14) Solve the equation to find the value of X :
 $3(x+2)=21$ **(2marks)**

15) Is the number 835,879 divisible by 11?
Show how you arrive at the answer.
(2marks)

16) Find the highest common factor (H.C.F) of 112 and 168. **(2marks)**

17) Find the average age of four children whose respective ages are 4 years, 6 years, 8 years and 10 years. **(2marks)**

18) BWUZU bought a shirt at 6,000Frw. He sold it at 7,200Frw. What was his percentage profit? **(2marks)**

19) Given the number 500.073, what is the place value:

(a) of 5? **(1mark)**

(b) of 7? **(1mark)**

20) The cost of 5 bottles of orange juice is 4,000Frw. What is the cost of 3 bottles of the same juice? **(2marks)**

21) Arrange the following fractions in descending order: $\frac{3}{8}$; $\frac{5}{12}$ (2marks)

22) Find the volume of firewood in a stack of 3m by 2m by 3m in decisteres (dst). (2marks)

23) Add:
7hours 25minutes + 1hour 45minutes
(2marks)

24) Draw the following angles:
(a) Reflex angle. (1mark)

(b) Right angle (1mark)

25) Calculate: $\frac{1}{2} + \frac{1}{4} - \frac{1}{5}$ **(2marks)**

26) Find the lowest common multiple (LCM) of 48 and 64. **(3marks)**

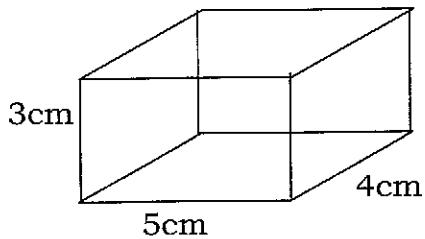
27) Change 25_{ten} to base three. **(3marks)**

28) If 0.20 of a number is 40, what is the number? **(3marks)**

29) Calculate the volume of a cone whose radius is 6cm and height is 10cm.
(use $\pi=3.14$) **(3marks)**

30) Calculate the sum of interior angles of a regular hexagon. **(3marks)**

31) The figure below is a rectangular prism whose length is 5cm, width 4cm and height 3cm.



Calculate:

(a) the total surface area. **(5marks)**

(b) the volume. **(2marks)**

32) The table below shows how primary six (P6) class scored in English Test marked out of 100.

Marks	60	40	70	35	10	15
Frequency	8	1	3	4	5	4

(a) Complete the table across. **(4marks)**

(a)

Marks (x)	Frequency (f)	
70	3	
	Sum of (f)=	Sum of (fx)=

(b) How many pupils are in P6? **(1mark)**

(b)

(c) Find the average mark of the class?
(2marks)

(c)

33) In a class of 16 pupils, 8 pupils like English, 10 pupils like Mathematics and x pupils like both subjects. Each pupil likes at least one of the subjects.

(a) Represent this information on a Venn diagram. **(3marks)**

(b) Find, x, the number of pupils who like both subjects. **(4marks)**

34) A man spent $\frac{1}{3}$ of his money on buying food, and $\frac{1}{6}$ of the remainder on communication.

(a) What fraction of his money was he left with? **(5marks)**

(b) If he was left with 15,000Frw, how much did he have at the beginning? **(2marks)**

35) A trader borrowed 600,000Frw from a bank at an interest rate of 6% per year.

(a) How much interest must he pay after five (5) months? **(5marks)**

(b) What amount will the trader pay altogether? **(2marks)**

Mathematics

PM

03/11/2015 9AM -11AM



Pupil's complete index number

Province/City District Sector School Pupil

<input type="text"/>									
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Pupil's names

Surname:

Other names:

**NB: PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR ON
THE REGISTRATION FORM.**

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2015

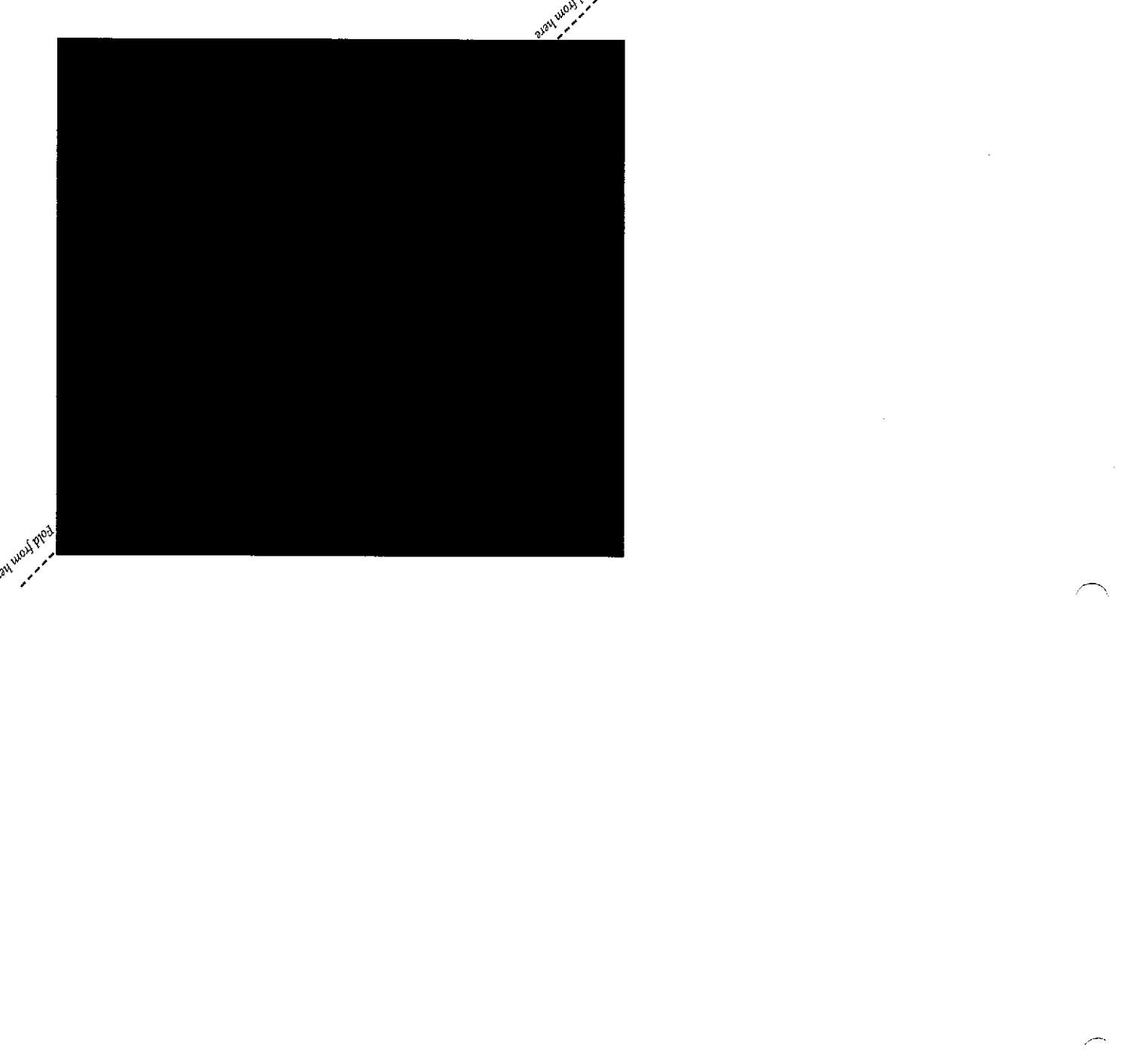
MATHEMATICS

Duration : Two hours

Marks : /100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) **This paper consists of 30 questions written on 12 pages. Before starting, verify if all pages and all questions are there and are arranged in ascending order.**
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided on this question paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You must use a blue or black pen.
- 8) You are allowed to use a ruler, and a protractor.
- 9) **You are NOT allowed to use a calculator.**



ANSWER ALL QUESTIONS IN THIS PAPER.

(100 MARKS)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.	GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.
1) Write the following number in the figures: Seven hundred and seventy million, eight hundred and eighteen thousand, five hundred and fifty five. (1mark)	
2) Evaluate: $9^3 + 4^5 =$ (1mark)	
3) Find the value of: $a^3 + 3b^2$; when $a = 2$ and $b = -2$. (2marks)	
4) Workout $16h15sec - 8h25min55sec =$ (2marks)	
5) What are the place values of 3 and 6 in the number 235.6? (2marks)	

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

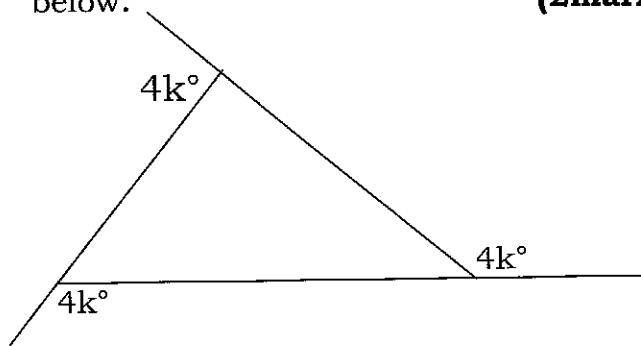
GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

- 6) Find the next two terms in this progression: **(2marks)**

1, 6, 36, -----, -----

- 7) The difference of two numbers is 6 and their sum is 20. Find the two numbers. **(2marks)**

- 8) Find the value of k degrees in the figure below. **(2marks)**



- 9) How many decasteres of wood can be obtained in a stack of firewood measuring 10m by 4m by 2m? **(2marks)**

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

10) Alice will be 17 years in 4 years.

(a) How old was she 3 years ago?

(2marks)

(b) How old will she be 6 years from now?

(1mark)

11) 100 pupils have enough food for 36days.

How long would this food last if the number of pupils was 80?

(3marks)

12) (a) Calculate 60% of 200. **(1mark)**

(b) Write 0.36 as a fraction. Give your answer in the lowest terms.

(2marks)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

13) A circle has a diameter of 100cm.

(a) Calculate the area of the circle in cm².
Use $\Pi=3.14$.

(2marks)

(b) Write your answer in part (a) above

in m².

(1mark)

14) Simplify : $\frac{4}{6} \times \left(\frac{6}{8} \div \frac{2}{6} \right) =$

(3marks)

15) The distance between two towns is 8km. A map on which these towns are shown has a scale of 1:50 000. Calculate the distance between the two towns on the map. Give your answer in centimeters (cm).

(3marks)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

- 16) The ratio of boys and girls in a school is 2:7. If the total number of pupils in this school is 720. How many boys and how many girls are there?

(3marks)

- 17) (a) Change: 8_{ten} to base five.

(2marks)

(b) Add: $110_{\text{two}} + 11_{\text{two}} = \text{-----}_{\text{two}}$

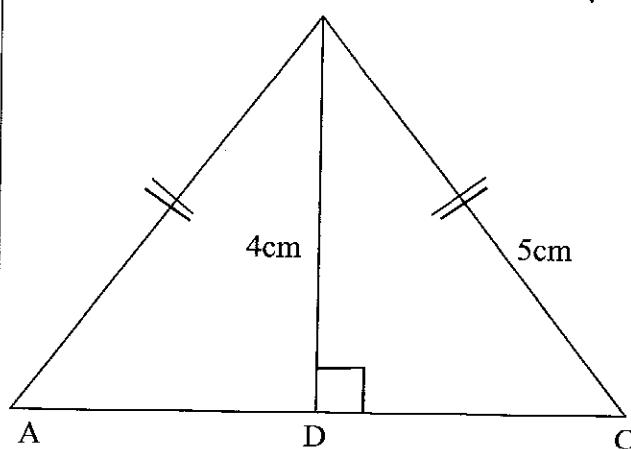
(2marks)

- 18) In the figure below, find:

(a) The length of AC. **(2marks)**

(b) The perimeter of the triangle ABC.

(1mark)



YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

19) A car covered a journey from town A to town B at a speed of 30km/hr in 6 hours and it took 4 hours to return through the same distance.

(a) Calculate the distance from town A to town B. **(1mark)**

(b) Calculate the average speed of the whole journey. **(2marks)**

20) A man spent $\frac{1}{2}$ of his salary on school fees, $\frac{1}{3}$ of the remaining on food and saved the remainder which is equal to 100 000Frw. Calculate the man's salary. **(3marks)**

21) The sum of two numbers is 18 and their quotient is 2. Find the two numbers. **(3marks)**

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

- 22) Mucuruzi mixed 40kg of beans which cost 300Frw per kg with 60kg of beans of a different type.

Find the unit price of the second type if the mixture cost 180Frw per kg.
(3marks)

- 23) The mass of solid X is 20g and its volume is 25cm³. The mass of solid Y is 30g and its volume is 40cm³.

Which solid has greater density?
(3marks)

- 24) The diagonals of a rhombus are 16cm and 30cm. Calculate the perimeter and the area of the rhombus.

(3marks)

- 25) A trader banked some money for 3 years at a simple interest rate of 10% per year. If the interest is 90,000Frw, how much money did he bank?

(3marks)

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

26) A wall separating two houses is 20m wide and 2.5m tall. One side of the wall is to be painted. The paint is applied at a rate of 0.095 litres per square metre. The cost of one litre of paint is 3,000Frw.

Find the cost of the paint needed to complete the job if 5% of paint is wasted.

(7marks)

27) Given the following coordinates:

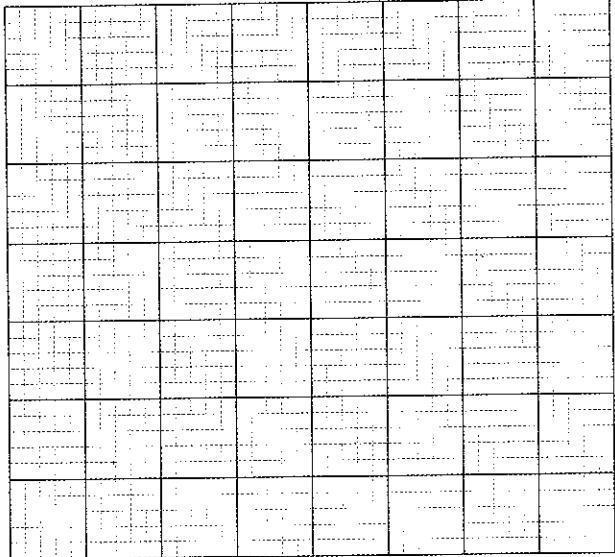
(1, 0), (2,1), (3,2), (4,3);

(a) Form the equation of the line passing through the points. **(2marks)**

(b) Indicate the points and sketch the line passing through the points. **(5marks)**

(a)

(b)



YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

- 28) A woman invests 2,000,000Frw for 3 years at a compound interest rate of 4% per year.

Calculate:

- a) Interest earned after 3 years.

(5marks)

- b) Total amount of money after 3 years.

(2marks)

- 29) The list below shows the marks scored by 29 pupils in an English test marked out of 10 marks.

1	3	0	1	2	1	3
1	0	6	1	2	1	4
6	4	0	3	1	2	0
1	2	1	2	1	2	5
1						

- (a) Complete the frequency table across.

(4marks)

- (b) Calculate the mean mark. **(2marks)**

(a)

Marks x	Frequency f	$f \times x$
0		
1		
2		
3		
4		
5		
6		
	Total $f =$	Total $f \times x =$

- (c) Find the mode mark. **(1mark)**

(b) The mean mark =

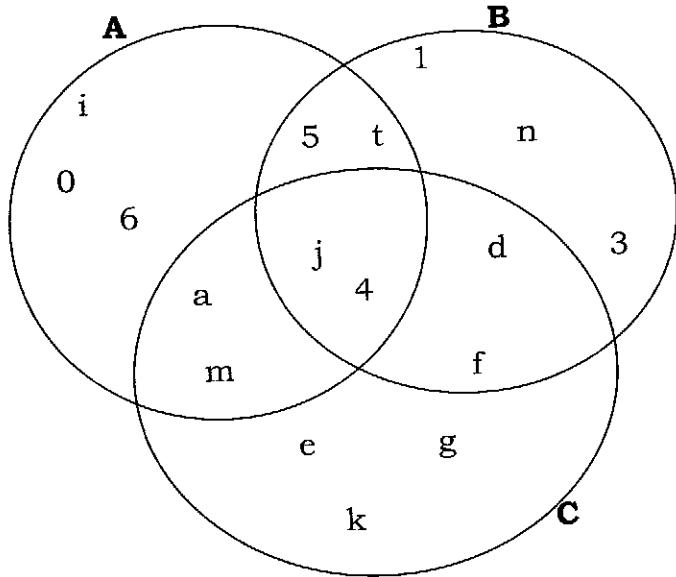
(c) The mode mark =

YOU MAY DO ROUGH WORK IN THE SPACE PROVIDED BELOW EACH QUESTION.

GIVE YOUR ANSWERS IN THE SPACE PROVIDED IN THIS COLUMN. SHOW THE WORKING STEPS.

- 30) From the Venn diagram below, list the elements of the sets following:

(7marks)



- (a) Set A
- (b) Set C
- (c) Set $A \cap B$
- (d) Set $A \cup B$
- (e) Set $B \cap C$
- (f) Set $A \cap (B \cap C)$
- (g) Set $A \cap (B \cup C)$

Mathematics

PM

21 Oct. 2014 09: 00-11: 00 AM



Pupil's complete index number

Province/City District Sector School Pupil

<input type="text"/>					
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Pupil's names

Surname:

Other Names:

**PUPIL'S INDEX NUMBER AND NAMES
MUST BE WRITTEN AS THEY APPEAR
ON THE REGISTRATION FORM.**

PRIMARY LEAVING NATIONAL EXAMINATIONS, 2014

MATHEMATICS

Duration: Two hours

Marks:

/100

INSTRUCTIONS

- 1) Do not open this question paper until you are told to do so.
- 2) This paper consists of 35 questions and 12 pages. Before starting, verify if all pages and all questions are there and are arranged in order.
- 3) Answer **ALL** questions in this paper.
- 4) Read each question carefully before answering it.
- 5) Answer the questions in the space provided on this question paper.
- 6) Show your working clearly. Marks will be given for showing steps.
All rough work must be done in the space under each question.
- 7) You must use a blue or black pen.
- 8) You are allowed to use a ruler, and a protractor.
- 9) **You are not allowed to use a calculator.**

**YOU MAY DO ROUGH WORK IN THE
SPACE PROVIDED BELOW EACH
QUESTION**

**GIVE YOUR ANSWERS IN THE
SPACES PROVIDED IN THIS
COLUMN - SHOW THE WORKING
STEPS.**

1. Add: $563,091 + 36,909$. **(2marks)**

2. (a) What is the place value of 0 (zero)
in the figure 460,123? **(1mark)**

(b) Write in figures :
Six million, eight hundred thousand,
twenty six. **(1mark)**

3. What is the square root of 2.25?
(2marks)

4. Subtract: $0.2\text{hm}^2 - 4\text{dam}^2 = \dots\text{m}^2$
(2marks)

5. Add and express the answer in binary:

$$101_{\text{two}} + 10_{\text{three}}$$

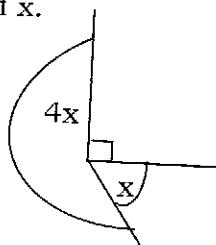
(2marks)

6. Calculate: $2\text{h}30\text{min} - 1\text{h}45\text{min}$.

(2marks)

7. In the figure below, find the value of x .

(2marks)



8. Find the mean of: 9, 3, 1, 8, 4 and 5.

(2marks)

9. How many lines of symmetry does

(a) a rectangle have ?

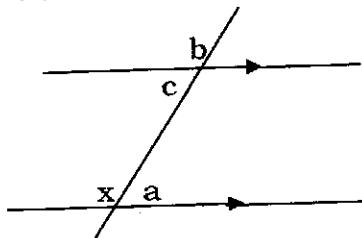
(1mark)

(b) a square have ?

(1mark)

10. In the figure below, which of the angles a, b or c is equal
(a) to angle x? **(1mark)**

(b) to angle a? **(1mark)**



11. Find the area of a square whose perimeter is 18 cm. **(2marks)**

12. Express 105 as a product of its prime factors. **(2marks)**

13. Solve for x: $2x - 1 = 2 - x$ **(2marks)**

14. Calculate the highest common factor (H.C.F) of 9, 12 and 15. **(2marks)**

<p>15. In a class of 40 pupils, the ratio of boys to girls is 2 : 3. Find the:</p> <p>(a) number of girls in the class. (1mark)</p> <p>(b) number of boys in the class. (1mark)</p>	
<p>16. In a school of 1,200 pupils, 60% weigh 40kg or more. How many pupils weigh less than 40kg? (2marks)</p>	
<p>17. (a) Six books cost 2,400Frw altogether. How many similar books can be bought with 5,000Frw? (1.5marks)</p> <p>(b) How much money will remain? (0.5mark)</p>	
<p>18. A pupil scored 28 marks out of 40. Express the pupil's marks as a percentage. (2marks)</p>	
<p>19. A water tank contains 6,000 litres of water. If a tap is opened and releases water at 20 litres per minute, how long will it take the tank to become completely empty? (2marks)</p>	

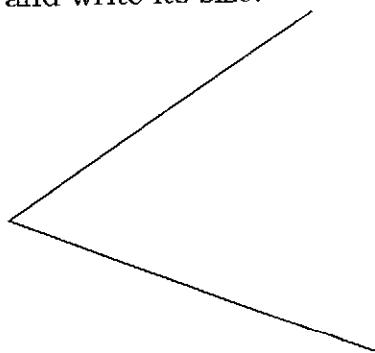
20. Simplify completely: $\left(\frac{3}{5} \div \frac{4}{5}\right) \times \frac{4}{9}$.
(2marks)

21. Evaluate: $\frac{4mp + 3n}{n}$ when $m = -3$, $n=6$
and $p=-2$.
(2marks)

22. Set A = {all prime numbers between 0 and 14}.
Set B = {all odd numbers between 0 and 14}.
(a) List the elements of $A \cap B$.
(1mark)

(b) Represent the information in a Venn diagram showing elements in each set.
(1mark)

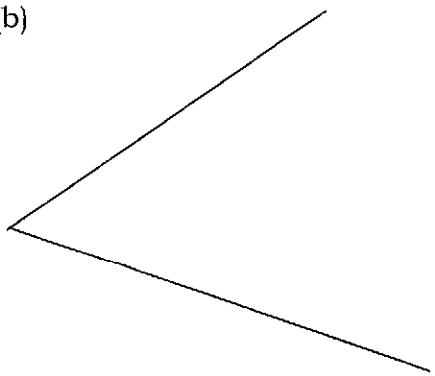
23. (a) Measure the acute angle below
and write its size.
(1mark)



(b) Using a pair of compasses and ruler,
bisect the acute angle above.
(1mark)

(a)

(b)

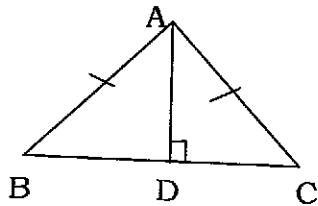


24. Find the percentage profit on a bicycle bought at 55,000Frw and sold at 66,000Frw. **(2marks)**

25. The total surface area of a sphere is $5,544\text{cm}^2$. Find its volume. [$\pi = \frac{22}{7}$] **(2marks)**

26. In triangle ABC, \overline{AD} is perpendicular to \overline{BC} , $AB = AC$ and angle ABC = 45° .

(a) Find the size of angle CAD. **(2marks)**



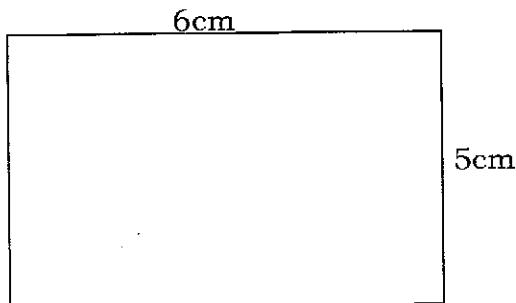
(b) What is the name given to the triangle ABC? **(1mark)**

27. Arrange the following fractions in ascending order : 0.42 , $\frac{11}{25}$, $\frac{12}{30}$, 0.41 **(3marks)**

28. A rectangular flower garden is represented by a scale drawing below with a scale of 1cm representing 10m. Calculate:

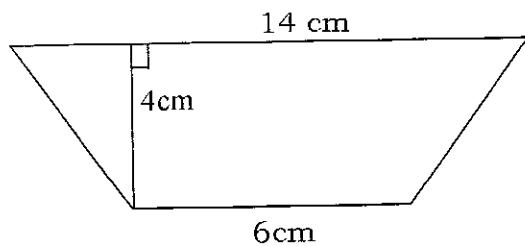
- (a) the actual length of the garden.
- (b) the actual width of the garden.
- (c) the surface area of the garden.

(3marks)



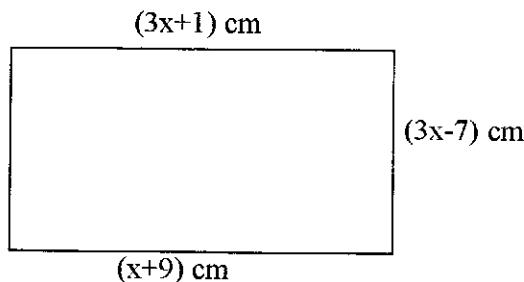
29. An interest of 20,000Frw was made after 2 years at a simple interest rate of 10% per year. Find the amount of money invested. **(3marks)**

30. The figure below is a trapezium. Find its area. **(3marks)**



31.(a) If $a = -1$, $b = 2$ and $c = 3$, find the value of $2a^2b - ac$. **(2marks)**

(b) Observe the figure below and answer the questions that follow.



(i) Name the figure. **(1mark)**

(ii) Calculate the value of x . **(2marks)**

(iii) Calculate the perimeter and the surface area of the figure.
(2marks)

32. A sum of 3,000,000Frw is invested for 2 years at a compound interest of 5% per year. What is the
(a) Interest after 2 years ? **(5marks)**

(b) Amount of money after 2 years?
(2marks)

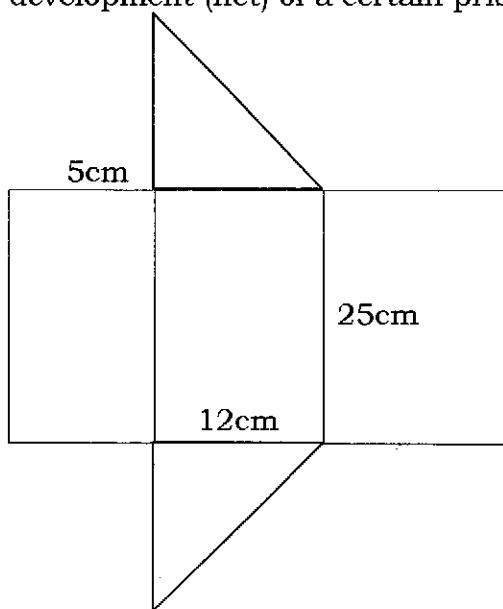
33. The height of a cylinder is 10cm and its base circumference is 44cm.

[$\pi = \frac{22}{7}$]. Find the:

(a) Volume of the cylinder. **(3marks)**

(b) Total surface area of the cylinder.
(4marks)

34. The figure below shows a development (net) of a certain prism.



(a) Calculate the volume of the prism.
(2marks)

(b) Calculate the total surface area of the prism.
(5marks)

35. Below are marks scored by 20 pupils in a Mathematics test marked out of 20 marks.

10	11	12	15	8
11	16	10	12	10
11	12	8	10	16
10	8	10	8	12

(a) Complete the frequency table across.
(4marks)

(b) Find the mode mark.
(1mark)

(c) Calculate the mean mark.
(2marks)

(a) Frequency table

Marks, x	Frequency, f	$f \times x$
	Total, $f =$	Total, $f \times x =$

(b) The mode mark =

(c) The mean mark=

Mathematics

PMA

06 Nov. 2012 09.00am-11.00 am

Pupil's complete index number

<i>Province/City</i>	<i>District</i>	<i>Sector</i>	<i>School</i>	<i>Pupil</i>
<input type="text"/>				

Pupil's names

Surname:

Other Names:

REPUBLIC OF RWANDA



RWANDA EDUCATION BOARD (REB)

PRIMARY LEAVING NATIONAL EXAMINATION

NOVEMBER 2012

MATHEMATICS

Duration: Two hours

Marks:

/100

INSTRUCTIONS

- *This paper contains 35 questions and 16 pages. Before starting, verify if all pages and all questions are there and are arranged in order.*
- **In the space provided, write your index number and names in full as written on your registration form.**
- Answer **ALL** questions in this paper.
- Read each question carefully before answering it.
- Answer the questions in the space provided on this question paper.
- Show your working clearly. No marks will be given when all steps are not shown.
- You must use a blue pen, a ruler, a pencil and a pair of compass only.
- **DO NOT USE A CALCULATOR.**

ANSWER ALL QUESTIONS IN THIS PAPER.

(100 marks)

Do rough work below each question	Write your final answer in this column
1. Find the next two numbers in the following sequence: 4, 7, 10, (2)	
2. Calculate: $340 \times 4 \div 170 \times 4$. (2)	
3. Find the area of a square whose perimeter is 20 cm. (2)	
4. Simplify: $\frac{1}{3} + \frac{1}{4} + \frac{5}{12}$. (2)	

5. Share 7000Frw between two students
in the ratio 2: 5. **(2)**

6. Express 140 as a product of its prime
factors. **(2)**

7. Arrange the following in ascending
order: $\frac{2}{5}$, $\frac{1}{3}$, $\frac{3}{7}$. **(2)**

8. Calculate the area of a parallelogram whose length is 10 cm, height is 4 cm and width is 6 cm. (2)

9. The cost of petrol was increased by 2% per litre.
Find the new price of 1 litre of petrol if the old price was 990 Frw. (2)

10. Solve the equation: $2x + 4 = 8 - 2x$. (2)

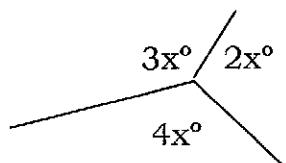
11. The perimeter of a rectangle is 36 cm.
Find its area if the width is 6 cm. (2)

12. Add and give the answer in base
two:
 $1011_{\text{two}} + 5_{\text{ten}}$. (2)

13. Set A = {2, 3, 5, 7, 11},
Set B = {10, 5, 2, 4}.
Find (a) $A \cup B$. (1)
(b) $A \cap B$. (1)

14. Find the value of x in the figure below.

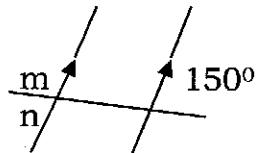
(2)



15. Find the area of a semicircle whose diameter is 0.14 dm. ($\pi = \frac{22}{7}$) (2)

16. A taxi starts from Kigali at 8.05 a.m and travels at an average speed of 60 km/h until 9.00 a.m.
What distance has the taxi travelled? (2)

17. In the figure below find (a) m. (1)
(b) n. (1)

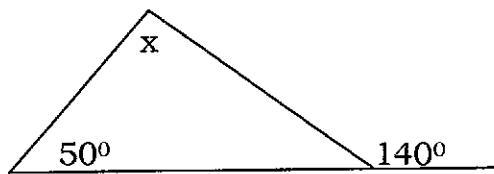


18. Write a pair of
(a) complementary angles. (1)
(b) supplementary angles . (1)

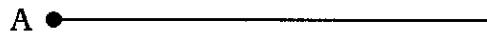
19. There is enough food for 3 people for
12 days.
How many days would this food last if
there were 9 people? (2)

20. The base of a right angled triangle is 8 cm and the hypotenuse is 10 cm.
Find the height of the triangle. (2)

21. Find angle x in the figure below? (2)



22. Draw an angle of 60° at point A on the line below. Use a ruler, a pair of compass and a pencil only. (2)



23. A shirt was sold at 20% loss for
8000 Frw.
What was the cost price? **(2)**

24. How many lines of symmetry does
(a) a rhombus have? **(1)**
(b) an isosceles triangle have ? **(1)**

25. The cost of a book is 5000 Frw.
How many books can be bought with
24000 Frw? **(2)**

26. Given that $x = -2$, $y = 3$, find the value of $2x^2 + xy - x$. (3)

27. The perimeter of the base of a cylinder is 31.4 cm.
Find the volume of the cylinder if the height is 10 cm. ($\pi=3.14$) (3)

28. An interior angle of a polygon is 150° .
How many sides does the polygon have? (3)

29. A man spends $\frac{1}{8}$ of his salary on fees,
 $\frac{2}{5}$ of the salary on a car loan.
He remains with 380000 Frw.
What is the man's salary? (3)

30. A pie chart represents goats, cows
and pigs on a farm. The angle
representing pigs on the pie chart is
45°. There are 40 pigs and 120 cows
on the farm.
How many goats are there on the
farm? (3)

31. Kigali is 50 km from RWAMAGANA.
A car leaves KIGALI for RWAMAGANA
at 7.30 am and travels at an
average speed of 45 km/h.
At the same time a taxi leaves
RWAMAGANA for KIGALI and travels
at an average speed of 30 km/h.

- (a) Find the distance from KIGALI
where the two vehicles meet. (5)
- (b) At what time do the two vehicles
meet? (2)

32. Use quick method to calculate:

(a) 642×50 . (2)

(b) 2224×49 . (2)

(c) 16999×99 . (2)

(d) 4444×25 . (1)

33. The table below shows the results of football matches played by a school football team.

Number of goals scored	0	1	2	3	4
Number of matches played	3	2	2	3	0

Calculate the mean number of goals per match. (7)

Number of goals x	Frequency f	fx
0		
1		
2		
3		
4		
Total		

Mean goals per match =

34. 90 000Frw is kept at 10% p.a compound interest.
Find the amount kept after 3 years. (7)

35. The information shows two types of beans and their costs per kilogram.

Type	Quantity	Cost per kilogram
A	300 kg	300 Frw
B	X kg	400 Frw

What is the value of X which would make the cost of one kilogram of the mixture 340Frw? (7)

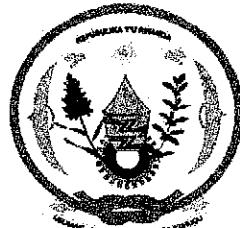
BLANK PAGE

Mathematics

PMA

25 Oct. 2011 9.00 am – 11.00 am

REPUBLIC OF RWANDA



RWANDA EDUCATION BOARD (REB)

P.O BOX 3817 KIGALI TEL/ FAX: 586871

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

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)

<i>Do rough work in this column</i>	<i>Write your answers in this column</i>
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; (2) 2 hours 24 minutes – 1 hour 56 minutes.	
4. Find the next two numbers in the sequence; (2) 2 , 6 , 18 , 54 , ,	

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

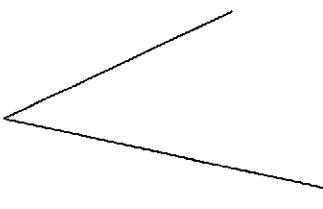
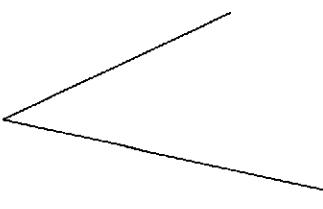
9. Simplify : $6x^2y^4 \div 3xy^2$

(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. (2)
Calculate the perimeter of the octagon.

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. $\pi = \underline{22}$. (2)

7

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: ANSWER 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)

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

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): $1011_{\text{two}} + 110_{\text{two}}$. (2)

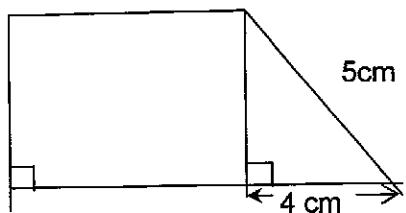
(b) Convert 72_{ten} to base three. (5)

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 $A \cap B$. (2)

(c) List the members of $A \cup B$. (3)

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



37. A and B are two towns 170 km apart. A bus leaves town A for town B at 9.00 a.m travelling at 56km/hr . A car leaves town B for town A at 9.00 a.m travelling at 80 km/hr.

(5)

(a) At what distance from town A do the two vehicles meet ?

(2)

(b) Find the time the two vehicles meet.

Mathematics

PMA

26 Oct. 2010 9.00 am – 11.00 am



P.O. BOX 3817 KIGALI-TEL/FAX : 586871

Pupil's complete index number

Province/City

--	--

District

--	--

Sector

--	--

School

--	--

Pupil

--	--	--

PRIMARY LEAVING NATIONAL EXAMINATION

October 2010

MATHEMATICS

Time: Two hours

Marks :

/100

Instructions

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

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

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

Write your index number in the space provided on your question paper.

Read each question carefully before answering it.

All rough work should be done in the space provided on your question paper.

Show neatly your work in the space provided on your question paper.

Do not use calculators or any other calculating device.

You need a pair of compasses, a ruler, a protractor, a rubber and a pencil.

SECTION A: Answer all questions. (65 marks)

1. Calculate: $55 \times 112 - 12 \times 55$. (2)

2. What is the place value of 4 in 85421? (2)

3. Arrange the following numbers from the smallest to the largest: 0, -1, -8, 11, 17. (2)

4. Calculate 0.031×1.1 giving the answer corrected to 2 decimal places. (2)

5. Complete: 0.4 litre = cm^3 . (2)

6. Write the next two numbers in the following sequence: 2, 8, 14, ,

7. A car uses 4 litres of petrol to travel 60km. How many km will it travel if it uses 16 litres? (2)

8. Find the Lowest Common Multiple of 15, 24 and 40. (2)

9. Express 48 in terms of its prime numbers. (2)

10. Solve the equation: $4(x + 1) = 2x + 7$. (2)

11. Increase 240 kg by 9%. (2)

12. Find the perimeter of a square whose area is 625 cm^2 . (2)

13. Complete the table below.

(2)

4	6	7	
9	13		25

14. In a sale, goods are sold for $\frac{3}{4}$ of the usual price.

(2)

What is the sale price for a pair of shorts whose
usual price is 2000 frw?

15. Simplify: $4x^4y^3 \times 2x^2y^2$.

(2)

16. To make one cake you use 1.25 kg of flour. How many kg of flour will be used to make 6 cakes? (2)

17. Find the circumference of the circle with the diameter 30 cm and $\pi = 3.14$. (2)

18. Decrease 150 m in the ratio 3:25. (2)

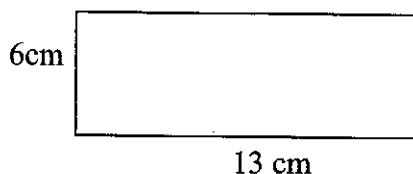
19. Ten men can dig a garden in 4 days. (2)
How many days would it take eight men to dig the same garden?

20. The angles of a triangle are 80^0 , 30^0 and x^0 . (2)
Find the value of x^0 .

21. 1, 200,000 frw is banked at 8% per year simple interest. Find the interest after 3 years. (2)

22. Write 45 in Roman numerals. (2)

23. Calculate the area of the rectangle below: (2)



24. $45 \text{ kg} + 65 \text{ g} + 1000 \text{ mg} = \dots \text{g}$. (2)

25. The base area of a cube is 64 cm^2 . Calculate the volume of that cube. (2)

26. If the cost price of a goat is 5000 frw and (3)
the selling price of the same goat is 6000 frw.
What is the percentage profit?

27. If the average of 12, X and 8 is 9 . What is the (3)
value of X .

28. If car travels 45 km in 50 minutes. How many (3)
km does it travel in 2 hours?

29. Simplify : $(\sqrt{64} - \sqrt{25}) \div \sqrt{9}$ (3)

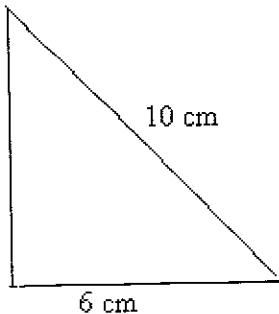
30. The following are the ages of 10 pupils: 11, 12, (3)
12, 13, 11, 14, 15, 11, 12, 11.
Find the (a) mode age.

(b) the average age .

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

31. A trader banks 1,000,000 frw at a compound interest of 6% per year. (7)
Find the amount of money after 3 years.

32. The figure below is a right angled triangle. (7) Find its area.



33. The base of triangular prism is a right angled triangle. The base of the triangle is 4 cm and height is 3 cm. (7)

Find the height of the prism if its volume is 48 cm^3 .

Calculate the total surface area of the prism.

34. (a) If 20 kg of beans mixed with maize contains 8 kg of beans, How many kilograms of maize will be found in 35 kg of maize mixed with beans? (4)

(b) 50 children have enough food for 18 days. How long would this food last if the number of pupils was 30 ? (3)

35. (a) Solve $\frac{2(2x-1)}{3} = \frac{3(x+3)}{2}$ (4)

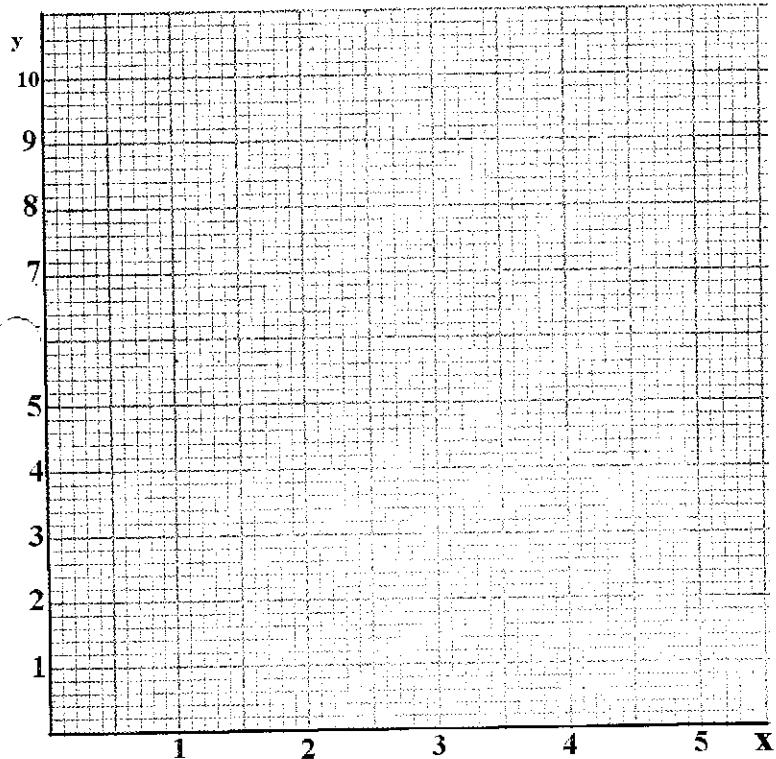
(b) If $m = -2$, $n = 3$ and $p = 5$, find the value of $2m^2 - 3n + 2p$. (3)

36. Using a ruler and a pair of compasses only, (7)
draw a triangle ABC in which $\overline{AB} = 6.2$ cm,
 $\overline{BC} = 5.0$ cm and angle ABC = 60° .
Measure using a protractor

- (a) angle BCA and angle BAC.
- (b) Length AC.

37. Use the table below and plot a graph of y against x. (7)

x	1	2	3	4	5
y	2	4	6	8	10



BLANK PAGE

Mathematics

PMA

28 Oct. 2008 9.00 am - 11.00 am

RWANDA NATIONAL EXAMINATIONS COUNCIL



P.O. BOX 3817 KIGALI-TEL/FAX : 586871

Pupil's complete index number

Province/City

District

Sector

School

Pupil

--	--

--	--	--

--	--	--

--	--

--	--	--

PRIMARY LEAVING NATIONAL EXAMINATION

October 2008

MATHEMATICS

Time: Two hours

Marks :

/100

Instructions

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

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

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

Write your index number in the space provided on your question paper.

Read each question carefully before answering it.

All rough work should be done in the space provided on your question paper.

Show neatly your work in the space provided on your question paper.

Do not use calculators or any other calculating device.

SECTION A: Answer all questions. (65 marks)

<i>Do rough work in this column</i>	<i>Write your answers in this column</i>
1. Calculate: $600 \times 0.75 + 0.25 \times 600$. (2)	
2. Write in figures: Eleven million eleven thousand and eleven. (2)	
3. Calculate and express the answer in ordinary fraction : $1\frac{1}{5} + 0.3$. (2)	
4. Simplify: $2x+5y-3x+y-4x+5x$. (2)	

5. Add and express the answer in hours: (2)
 $61\text{min } 10\text{s} + 58\text{min } 50\text{s}$

6. How many twelfths are equivalent to one-third? (2)

7. Solve $5x - 10 = 2x - 7$ (2)

8. Find the square root of 1296. (2)

<p>9. Write the next two numbers in the following sequence: 2, 5, 10, 17, . . . , . . . ,</p>	(2)								
<p>10. Complete the table below.</p> <table border="1" data-bbox="39 581 729 668"> <tr> <td>12</td><td>16</td><td>20</td><td>24</td></tr> <tr> <td>9</td><td>?</td><td>15</td><td>?</td></tr> </table>	12	16	20	24	9	?	15	?	(2)
12	16	20	24						
9	?	15	?						
<p>11. A ship leaves port A at twelve noon on Monday and sails to port B. After a hundred hours, the ship arrives at port B.</p> <p>a) At what time does the ship arrive at port B?</p> <p>b) On which day of the week does the ship arrive at port B?</p>	(2)								
<p>12. Use < or > to complete the following statement:</p> $\frac{7}{20} \quad \cdot \cdot \cdot \quad \frac{11}{30}$	(2)								

13. 5 kg of sugar was reduced by 1.5 kg. In what ratio (2)
was the sugar reduced?

14. Find the simple interest on 300,000 frw for 4 (2)
months at 8% interest rate per year.

15. Find the curved surface area of a cylindrical tube (2)
with radius 3.5 cm and height 15 cm. $\pi = \frac{22}{7}$.

16. The following are marks scored by 9 pupils: (1)
25, 30, 29, 25, 28, 25, 27, 28, and 30.
Find: (a) the mode mark.

(b) the median mark . (1)

17. A cow was sold at a profit of 5% for 525,000 (2)
frw. What was the cost price?

18. 500 g of bread contains 5 g of salt. How much salt (2)
is contained in 150 g of the bread?

19. The perimeter of a square is 100 cm. Find the area (2) of the square.

20. The interior angle of a regular polygon is 150° . (2)
How many sides does the polygon have?

21. Add and express the answer in square metres: (2)
 $2.5 \text{ ha} + 11,000 \text{ dm}^2$.

22. The diameter of a base of a cone is 6 cm and the height is 14 cm. Calculate the volume of the cone. (2)

$$\pi = \frac{22}{7}$$

23. The mass of a solid is 178 g and its density is 8.9 g/cm³. Calculate the volume of the solid. (2)

24. Trees are planted in a straight line on a stretch of land 2.16 km. The distance between a tree and the next tree is 1.8 m. Find the number of trees planted. (2)

25. Find the value of:
 $4m + 2x - y$ if $m = -2$, $x = 0$ and $y = -3$. (2)

26. At 40 km/hr a cyclist can complete a journey in 10 minutes more than at 60 km/hr. How long is the journey? (3)

27. Share 350,000 frw between John, Mary and Joy so that Joy receives $\frac{1}{2}$ of what Mary receives and Joy receives 2 times as much as John receives. (3)

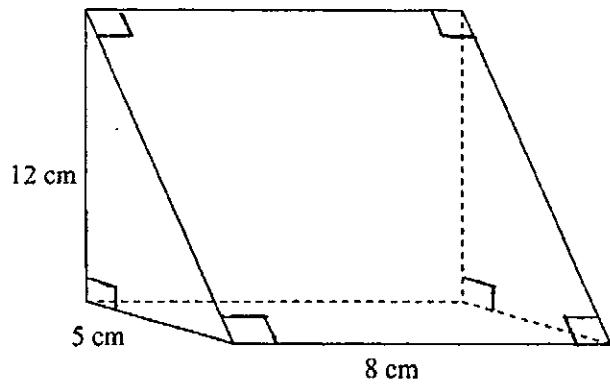
28. Find the amount of money if 1,000,000 frw is invested at 12% per year compound interest for 2 years. (3)

29. Arrange the following fractions in the ascending (3)
order: $\frac{2}{5}$, $\frac{4}{9}$, $\frac{11}{40}$

30. The ratio of the angles of a triangle is 4 : 3 : 2. (3)
Find the three angles.

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

31. Calculate the total surface area of the prism below. (7)



32. Solve: (a) $4(x - 1) = 2(x + 4)$.

(4)

$$(b) \frac{x}{3} + 1 = \frac{x-2}{2} \quad (3)$$

33. 120 kg of beans costing 200 frw per kilogram is mixed with a second type of beans costing 240 frw per kilogram. How many kilograms of the second type of beans are needed to make the cost of 1kg of the mixture to be 210 frw? (7)

34. Simplify completely: (7)

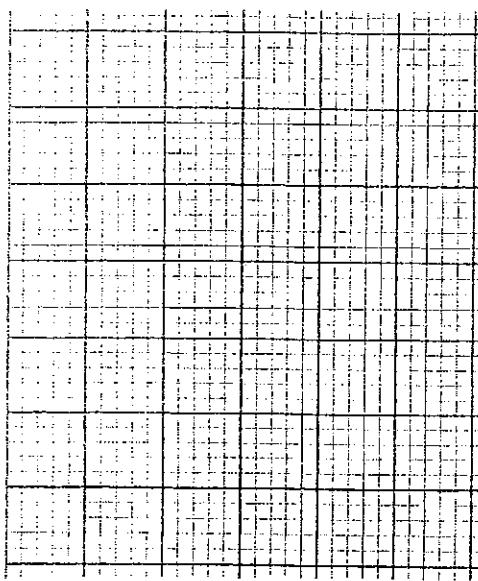
$$\left(1\frac{1}{4} - \frac{7}{10}\right) + \left(\frac{2}{3} + \frac{4}{9}\right) - \frac{1}{4}$$

35. The angles of a pentagon are x , $2x$, $2.5x$, $3x$, $3.5x$. Find each angle. (7)

36. Students were asked to name their favourite subjects at school. The results are shown below: (7)

Subject	Maths	History	Music	Physics	Religion
Number of pupils	2	4	5	1	3

Draw a histogram, on the graph paper on the right, to show this information.



37. The sum of the edges of a cube is 96 cm. (5)
Calculate: (a) the total surface area of the cube.
Express the answer in dm^2 .

- (b) the volume of the cube. (2)

BLANK PAGE

Mathematics

PMA

23 Oct. 2007 9.00 a.m - 11.00 a.m

RWANDA NATIONAL EXAMINATIONS COUNCIL



P.O. BOX 3817 KIGALI-TEL/FAX : 586871

Pupil's complete index number

Province/City

District

Sector

School

Pupil

--	--

--	--	--

--	--	--

--	--	--

--	--	--	--

PRIMARY LEAVING NATIONAL EXAMINATION

October 2007

MATHEMATICS

Duration : Two hours

Marks :

/100

Instructions

Write your index number in full as written on your registration form.

Answer all questions in section A.

Answer only 5 questions in section B.

Read each question carefully before answering it.

Show the necessary working clearly in the space provided.

Rough work must be done in the space provided on the question paper.

Do not use calculators or any other calculating device.

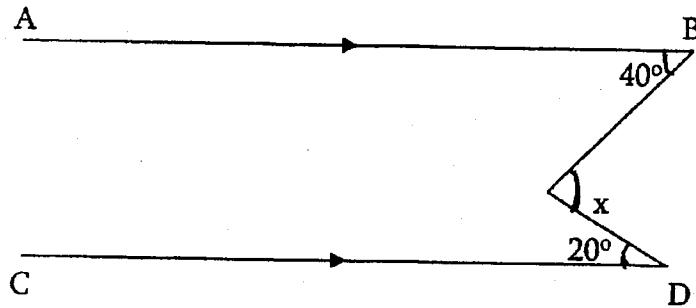
SECTION A (65 marks)

<i>Do rough work in this column.</i>	<i>Show your working and answers in this column.</i>
1. Simplify completely: $\left(\frac{5}{6} \times 2\right) \div \frac{1}{9}$ (2)	
2. Calculate $\frac{2}{3}$ of 900 g and express the answer in kg. (2)	
3. Express 858 as a product of its prime factors. (2)	

4. Solve : $3m + 4 = 5m - 2$. 	(2)
5. Write 1960 in Roman Numerals. 	(2)
6. Find the lowest common multiple of 21, 45 and 50. 	(2)
7. Calculate the volume of a cube whose total surface area is 150 cm^2 . 	(2)

8. Simplify the algebraic express: (2)
 $5(2y + x) + 2(x - 4y)$.

9. In the figure below, line AB is parallel to line CD. (2)
Find angle x .



10. Complete the table below. (2)

2		8	12
5	17	65	

11. The sum of 3 consecutive odd numbers is 57. (3)
Find the 3 numbers.

12. Simplify completely: (2)

$$\frac{3.2 \times 2.8}{0.7 \times 8}$$

13. What number when increased by 15% becomes (2)
3450?

14. Complete: (2)
1 hour 3 minutes 2 seconds = seconds.

15. A book costing 2 400 frw is sold for 2 640 frw. (2)
Find the percentage profit.

16. Show that 70470 is divisible by 9 without using long division method. (2)

17. Find the value of $m^2 + 2ab - n$ (2)
if $m = 2$, $b = -1$, $a = 3$ and $n = -4$.

18. Share 28 000 frw between John and Peter in the ratio (2)
2:3 respectively.

19. One interior angle of a regular polygon is 120° . How (2)
many sides does the polygon have?

20. The volume of a substance is 60 m^3 and its density is (2)
 1.26 kg/m^3 . Find the mass of the substance.

21. The speed of a moving car is 60 km/hr. The car maintains this speed for 1 hour 20 minutes. What is the distance travelled by the car? (2)

22. A chapter in a mathematics text book is printed on pages 141 to 212 of the book. How many papers is this chapter printed on? (2)

23. Calculate the area of a triangle whose base is 7 cm and height 16 cm. (2)

24. 5 men take 4 days to paint a house. How many days (2)
will 8 men take to paint the same house?
Assume all men work at the same rate.

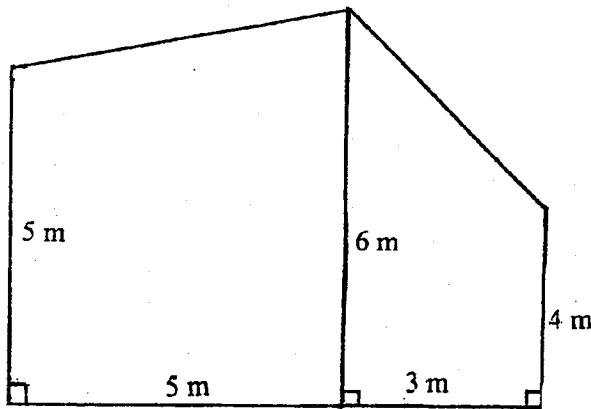
25. Write the next two numbers in the following (2)
sequence: 2, 4, 12, 48, ,

26. A car travels 35 km on 2.5 litres of petrol. How much (2)
does it cost to travel 280 km if the cost of 1 litre of
petrol is 600 frw?

27. How many revolutions does a bicycle wheel of 70 cm diameter make to cover a distance of 8.8 km? (3)

$$\pi = \frac{22}{7}$$

28. Calculate the area of the figure below. (3)



29. The cost of 3 kg of potatoes and 4 kg of beans is (3)
840 frw. The cost of 1 kg of beans is 70 frw more
than the cost of 1 kg of potatoes.
Find the cost of 1 kg of beans.

30. The simple interest on a capital of 800 000 frw after 3 (3)
months is 12 000 frw.
Find the interest rate per year.

SECTION B (35 marks)
Answer only 5 questions.

31. The diagonals of a rhombus are 10 cm and 24 cm.

Calculate

- a) the area of the rhombus. (2)
- b) the perimeter of the rhombus. (5)

32. Calculate completely: (7)

$$\frac{\frac{1}{5} \times (6\frac{3}{4} - 4.75) \times (3.875 - 2\frac{3}{8})}{(1.5 \times 1.5) \div 2\frac{1}{2}}$$

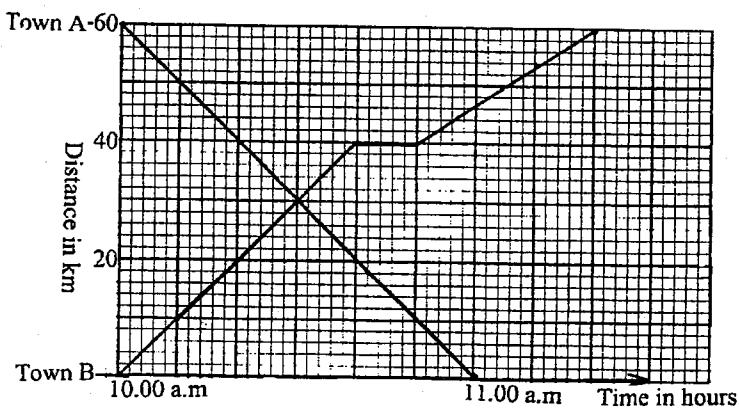
33. David sells cars worth 90 000 000 frw on behalf of the importer. He receives a commission of 10% on the first 50 000 000 frw and 3% on the remainder. How much money does the importer receive if he pays 5% tax? (7)

34. (a) Solve: (4)

$$\frac{2x - 4}{x} - \frac{6x + 2}{2x} = 0 \text{ if } x \text{ is not equal to 0.}$$

(b) Four times a number is the same as the number increased by six. Find the number. (3)

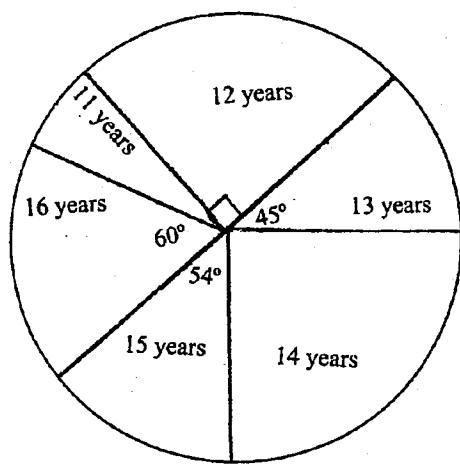
35. Town A is 60 km away from town B. A taxi left town A for town B at the same time when a lorry left town B for town A. The journey is represented by the graph below.



From the graph:

- a) At what time did the taxi meet the lorry? (1)
- b) For how long did the lorry stop on the way? (1)
- c) What was the average speed of the taxi? (2)
- d) At what time did the lorry reach town A? (1)
- e) Find the average speed of the lorry for the whole journey. (2)

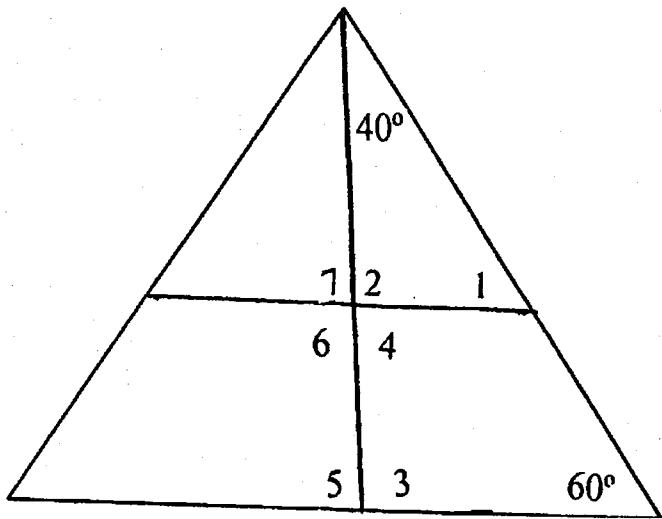
36. The pie chart below shows the ages of primary school pupils. 10 pupils are 11 years old.



- (a) How many pupils does the pie chart represent? (2)
- (b) How many pupils are (1)
(i) 12 years old? (1)
(ii) 13 years old? (1)
(iii) 14 years old? (1)
(iv) 15 years old? (1)
(v) 16 years old?

37. In the figure below find the size of angles

- | | |
|---------|-----|
| (i) 1 | (1) |
| (ii) 2 | (1) |
| (iii) 3 | (1) |
| (iv) 4 | (1) |
| (v) 5 | (1) |
| (vi) 6 | (1) |
| (vii) 7 | (1) |



Mathematics

PMA

08 Nov 2005 9h00 - 11h00



P.O.BOX 3817 KIGALI - TEL/FAX : 586871

Pupil's complete index number

Province

--	--

District

--	--

School

--	--

Student

--	--	--	--

PRIMARY LEAVING NATIONAL EXAMINATION

November 2005

MATHEMATICS

Duration: Two hours

Marks:

/ 100

Instructions

- Write your index number in fully as written on your registration form.
- This paper has 30 questions in section A and 7 questions in section B.
- Answer all questions in section A and any Five questions in section B.
- Show all the necessary working clearly.
- Rough work must be done in the space provided on the question paper.

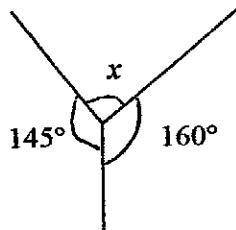
SECTION A (65 marks)

<i>Do rough work in this column</i>	<i>Show your working and answers in this column</i>
1. Simplify completely: $(2\frac{1}{3} \times \frac{9}{14}) \div \frac{3}{4}$	(2)
2. Solve: $8x - 7 = 2x + 5$.	(2)
3. Divide 10 000 kg in the ratio 3:7.	(2)

4. Calculate the H.C.F. of 45 and 60. (2)

5. Remove the brackets and simplify the following: (2)
 $4(m - 3n + 3) - 3(m - n + 4)$.

6. Find the value of x in the diagram below. (2)



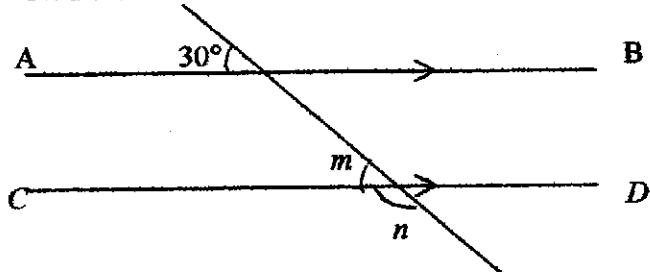
7. Calculate the area of a triangle whose height is
10 cm and base is 6 cm. (2)

8. Divide $0.8 \div 0.05$. (2)

9. Find the simple interest on 240 000 frw for
8 months at 5% interest rate per year. (2)

10. Calculate the circumference of a circle whose
radius is 5 cm. $\pi = 3.14$. (2)

11. In the figure below line AB is parallel to line CD. (2)
Find the values of m and n .



12. The volume of a metal is 12 cm^3 and its weight is 96 g. Find the density of the metal. (2)

13. Calculate: $\frac{1}{9}$ of 162 + 0.2 of 80. (2)

14. The total surface area of a cube is 24 cm^2 . (2)
Calculate the volume of the cube.

15. A person walks 6 km in 50 minutes. Find the speed (2)
and express the answer in meters/second.

16. John's salary is increased by 3%.
(2)
Calculate John's new salary if the salary increase
is 9 000 frw.

17. Write the next two numbers in the sequence : (2)
2; 5; 10; 17; 28;;

18. A trader pays 60 000 frw for a bicycle and then sells it at 75 000 frw. Find the percentage profit. (2)

19. Calculate the perimeter of rhombus whose side is 5 cm. (2)

20. The average of 3, 5, 7, 8 and x is 5. Find x . (2)

21. A tray of 30 eggs costs 1 500 frw.
Calculate the cost of a dozen eggs. (2)

22. Complete the table below. (2)

2	4	5	?	10
5	9	?	19	21

23. 4 boys eat some food for 9 days. How long does it take 6 boys to finish the same food?
Assume all boys eat equal shares. (2)

24. If $m = 2$, $p = 3$ and $n = -4$,
find the value of $m^2p - 2np$.

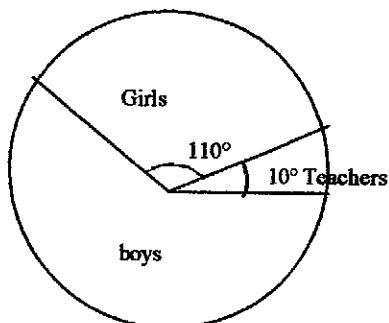
(2)

25. The square of a number added to the square of
another number the result is 181.
Find the two numbers.

(2)

26. Arrange the following in descending order: (3)
 $\frac{3}{5}$; $\frac{60}{125}$; $\frac{39}{75}$; 0.56.

27. The pie chart below represents the number of boys, girls and teachers in a school.



Given that the number of girls in the school is 220,
find the number of (a) teachers
(b) boys in the school.

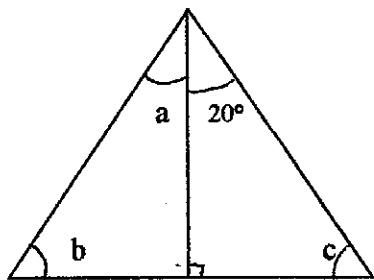
(1)
(2)

28. 3 bells ring at intervals of 4, 6 and 10 minutes respectively. If they are started to ring together, how soon after will they next ring together again?

(3)

29. 40 kg of beans are mixed with maize. The cost of 1 kg of beans is 200 frw, 1 kg of maize is 120 frw and 1 kg of the mixture is 160 frw. Find the number of kilograms of the maize. (3)

30. Below is an isosceles triangle. (3)
Find the sizes of angles a, b and c.

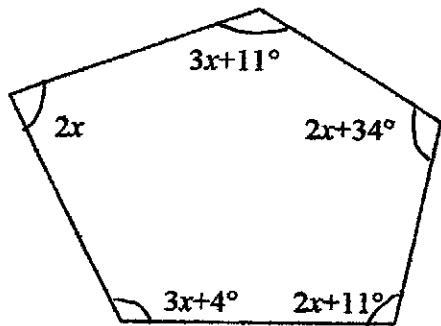


SECTION B (35 marks)*Answer only five questions in this section*

31. The marks of 25 pupils on a test marked out of ten are: 5, 5, 4, 1, 5, 1, 5, 1, 3, 7, 5, 4, 6, 4, 2, 0, 3, 7, 5, 4, 4, 0, 5, 0, 3.

- (a) Draw a frequency table using this information (4)
(b) Calculate the average mark. (3)

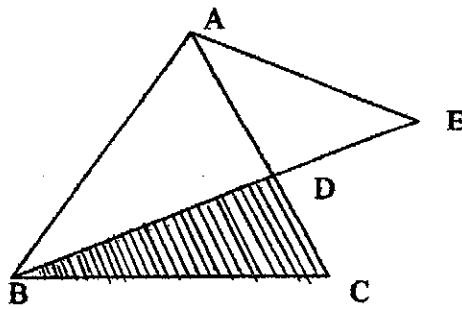
32. The figure below is an irregular polygon. Find the size of each angle. (7)



33. A trader banks 250 000 frw at 9% per year compound interest rate. The interest is calculated every 4 months. Find the amount of money in the bank at the start of the second year.

(7)

34. In the figure below, triangle ABC is an equilateral triangle, \overline{BE} bisects angle ABC, $\overline{AB} = 10$ cm and $\overline{AD} = \overline{DE}$.

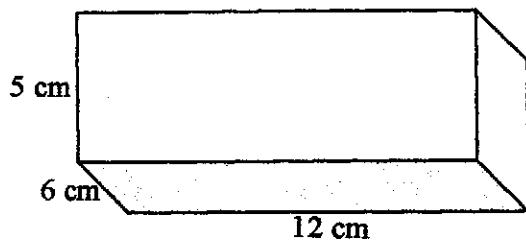


- (a) Find the size of (i) angle ABD (1)
(ii) angle ADB (1)
(iii) angle DAE (1)
- (b) How long is line \overline{AD} ? (1)
- (c) Calculate the area of triangle BCD if $\overline{BD} = 8.7$ cm. (2)
- (d) Find the size of angle BAE. (1)

35. A cyclist leaves town A for town B at 8.00 a.m and travels at a speed of 15 km/h. 2 hours later a motorist leaves town A for town B travelling at an average speed of 45 km/h. The motorist follows the same road as the cyclist.

- (a) How far from town A does the motorist overtake the cyclist? (5)
- (b) At what time does the motorist overtake the cyclist? (2)

36. The figure below is a model of cuboid made out of a paper.

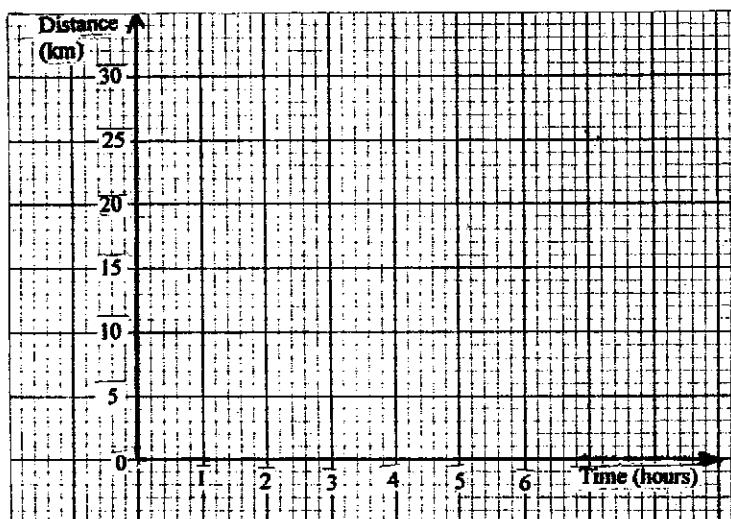


- (a) Sketch its net (2)
(b) Calculate the total surface area of the cuboid (3)
(c) Calculate the volume of the cuboid. (2)

37. The table below shows the time taken and distance covered for a person travelling at a constant speed.

Time (hours)	1	3	5	6
Distance (km)	5	15	25	30

- (a) Use the table and draw the graph of this movement. Use the graph paper below. (5)



- (b) Find the time taken to cover 23 km from the graph. (1)

- (c) Find the distance covered in 1 hr 24 min (1)

BLANK PAGE

Mathematics

PMA

23 Sept 2004

9h00 – 11h00



B.P.O.BOX 3817 KIGALI - TEL/FAX : 586871

Pupil's complete index number

Province

District

School

Student

--	--

--	--

--	--

--	--	--	--

**PRIMARY LEAVING NATIONAL EXAMINATION
2003-2004**

September 2004

MATHEMATICS

Duration: Two hours

Marks:

/ 100

Instructions

Write your index number in full.

Answer all questions in section A.

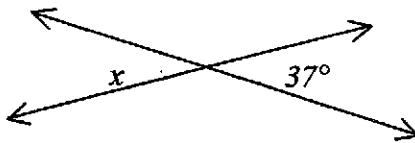
In section B don't choose more than five questions.

Read each question carefully before answering it.

Show the necessary working clearly in the space provided.

Rough work must be done in the space provided on the question paper.

SECTION A (65 marks)

<i>Do rough work in this column</i>	<i>Show your working and answers in this column</i>
1. Write the number 1994 in words. (1)	
2. What is the value of x in the figure below? (1) 	
3. Which is the place value of 3 in the number 40301? (1)	
4. Round off 2567 to the nearest a hundred. (1)	
5. Calculate: $5 \text{ kg} + 200 \text{ dg} = \dots \text{ g.}$ (1)	
6. Find the next two numbers in the following sequence : 25; 48; 72; 97;; (1)	
7. Draw all lines of symmetry for the rectangle below. (1) 	

8. Write 90 in Roman numbers.	(1)
9. Hundred bank notes of Rwanda francs paid to the Headmaster are numbered from AA7591510 to AA7592000. How much money is this?	(2)
10. A number divided by $\frac{1}{5}$ is 50. Find the number.	(1)
11. Which of the following numbers is divisible by 3 completely 172, 259 and 501?	(1)
12. What is the sum of prime numbers between 0 and 10?	(1)
13. How many cups of tea, each measuring 250 cm^3 can be obtained from 2.5 litres of tea?	(1.5)

14. Calculate : 8400×0.75 .

(1)

15. How many litres of water are obtained if 2000 litres of water are increased by 20%?

(1)

16. Fill in the missing numbers in the table below.

(1)

9		11	20
80	99	120	

17. Express $\frac{4}{25}$ as a decimal number.

(1)

18. Find the value of x given $3x + 5 = x + 9$.

(1.5)

19. On a map, a line of 4 cm represents 2 km on land. (2)
Find the area of a square land whose sides are each 10 cm long on the map.

20. Arrange the following fractions in ascending order: $\frac{31}{84}$, $\frac{2}{7}$, $\frac{8}{21}$. (1.5)

21. The average age of 15 students is 16 years and the average age of 5 other students is 6 years. Calculate the average age of the whole group. (3)

22. Find the simple interest on 40 000 frw for 4 years at 11 % interest rate per year. (2)

23. Calculate $\frac{2}{5}$ of $105\ 000\ \text{cm}^2$ and express the answer in square metres. (1.5)

24. The area of a square is $81\ \text{cm}^2$. Calculate the perimeter of the square. (2)

25. Simplify completely $1\frac{5}{6} \div \left(\frac{2}{3} + \frac{1}{4} \right)$. (2)

26. Find the L.C.M. of 39 and 52. (1.5)

27. In shop A a dozen of pencils costs 600 frw while in shop B a packet of 20 dozens of the same pencils costs 10800 frw. Which of the two shops would you go to buy a pen? (1.5)

28. Given that $m = 4$, $n = -2$ and $y = 5$, calculate the value of $my - 4n$. (2)

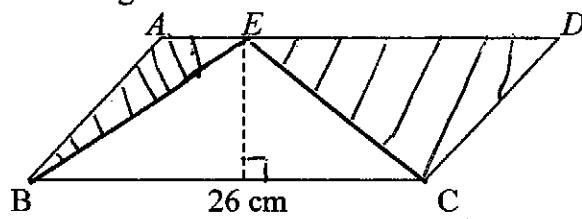
29. Find the sum of interior angles of a regular polygon which has 6 sides. (2)

30. The density of a solid is 0.765 g/cm^3 and its volume is $2\ 000 \text{ cm}^3$. Calculate the mass of the solid. (1)

31. John and Mary shared 200 000 frw among themselves. Mary received 4 times as much as John received. How much money does each person receive? (3)

32. Musa bought 3 000 kg of beans at 300 000 frw. (3)
He sold all the beans at 115 frw per kilogram.
Calculate Musa's percentage profit.

33. In the figure below, ABCD is a parallelogram. (3)
Calculate the area of the shaded part if the height
of triangle BCE is 12 cm.

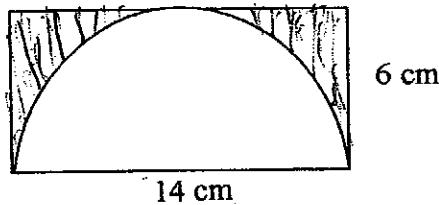


34. 40 children eat 8 kg of rice per day. How many (2)
kilograms of rice do 10 children eat in 5 days?

35. $\frac{3}{8}$ of pupils in a class are girls. If there are 25 boys in a class, find the total number of girls in the class. (2)

36. A car started a journey at 8.30 a.m. and ended at 2.30 p.m. the same day. If the car covered 300 km, calculate the speed of the car. (2)

37. The figure shows a semi-circle enclosed in a rectangle. Calculate the perimeter around the shaded area. Take $\pi = \frac{22}{7}$ (2)



38. A government bought 20 cars from a car factory at 18 000 000 frw per car. There was a 10% discount (reduction). How much money was paid for the 20 cars? (2)

39. A water tank is 1.5 m deep, 2 m wide and 3 m long. How many litres of water does the tank contain if it is completely full? Ignore the volume of the materials of which the tank is made. (2)

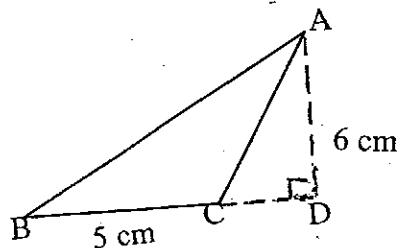
40. An electric cable costs 2 000 frw per metre. Find the cost of an electric cable 65.5 m long if 6 % tax is added to the actual cost. (2)

SECTION B (35 marks)

Answer only five questions in this section

41. In the figure below, the area of triangle ABD is 24 cm^2 . Find the ratio of the area of triangle ACD to the area of triangle ABC.

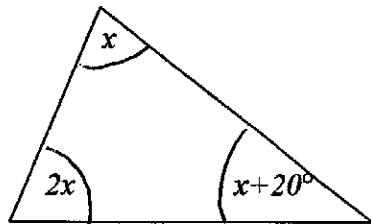
(7)



42. a) Solve for x : $\frac{(2x-3)}{2} - \frac{(x+1)}{5} = \frac{7}{10}$. (3.5)

b) Find the size of each angle in the triangle.

(3.5)

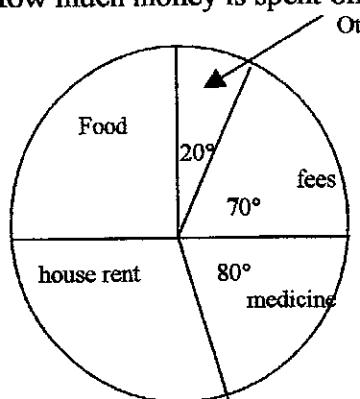


43. A sum of 100 000 frw is banked at compound interest rate of 10% per year for 4 years. Calculate the total amount of money in the bank after 4 years.

(7)

44. A man earns 90 000 frw per month. The pie chart below shows how the money is spent. How much money is spent on each item?

(7)

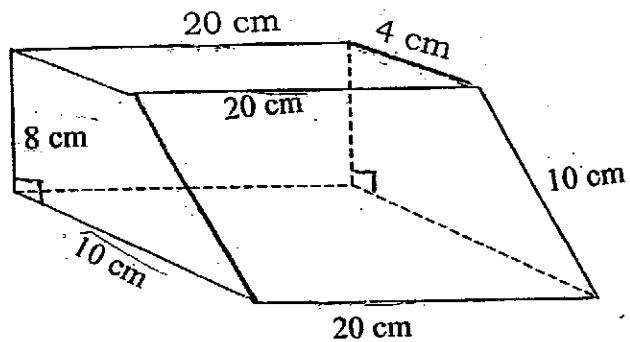


45. 10 men complete some work in 20 days. All men work at the same rate.
- a) How many men complete the same work in 5 days? (2)
 - b) How long does it take 8 men to complete the same work? (2)
 - c) If the cost of the completed work is a fixed amount of 200 000 frw, how much money does each man in question 45(a) take home each day if he eats 200 frw every day? (3)

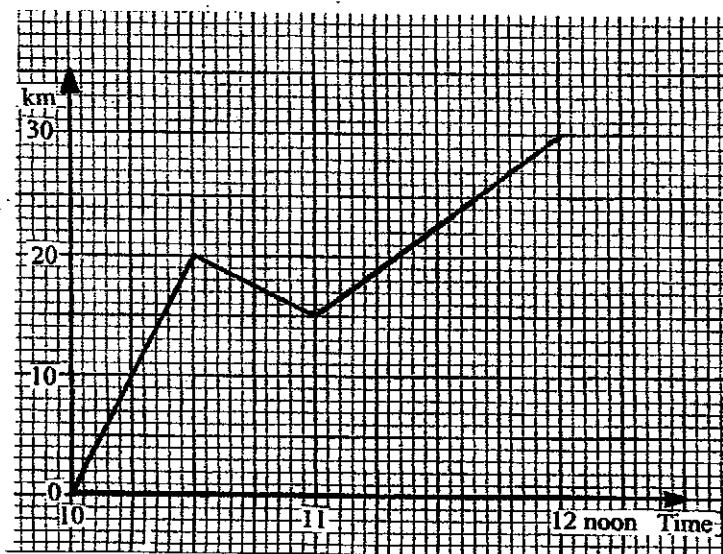
46. Below is a prism with a pair of opposite trapezium cross section area ends. Calculate

- a) the volume of the prism
- b) the total surface area of the prism.

(2)
(5)



47. The graph below shows a journey of a person who visited a friend in another village.



- a) How far did the person travel after 15 minutes? (1)
- b) At what time did the person turn back towards his home? (1)
- c) What distance does the person travel towards his home after turning back? (1)
- d) How far was the person from his home 1 hour after starting the journey? (1)
- e) Find the average speed for the whole journey? (3)

48. Below are the results from the voting of constitution in a certain country.

Number of people registered for voting = 4 000 000

Number of people who voted yes = 3 332 000

Number of people who voted no = 392 000

Number of spoilt votes =?

Percentage of people who were absent = 2 %

- a) How many people (i) were absent? (1)
(ii) voted altogether? (1)
- b) How many votes were spoilt? (1)
- c) Express
 - (i) yes votes as percentage of all the people who voted (1)
 - (ii) no votes as percentage of all the people who voted (1)
 - (iii) spoilt votes as percentage of all the people who voted. (2)

49. Town M and Town N are 120 km apart. A car starts from Town M and drives to Town N at an average speed of 60 km/hr. At the same time a cyclist leaves Town N for Town M at an average speed of 30 km/hr.

- a) How far from Town M does the car meet the cyclist? (4)
- b) What time does the car take before it meets the cyclist? (1)
- c) The car takes 20 minutes to reach Town N after meeting the cyclist. Calculate the average speed of the car from Town M to Town N . (2).

50. A shopkeeper buys 200 kg of beans at 100 frw per kilogram and maize at 80 frw per kilogram. A shopkeeper finds that the cost of the mixture is 92.5 frw per kilogram.

- a) How many kilograms of maize does the shopkeeper buy? (5.5)
- b) The shopkeeper wants a profit of 20 %. (1.5)
What is the selling price of 1 kg of the mixture?

BLANK PAGE

RWANDA NATIONAL EXAMINATIONS COUNCIL



P.O. BOX 39817 KIGALI.- TEL/FAX 86871

Pupil's complete index number

Province

District

Exam Centre

Student

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>
----------------------	----------------------

<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------

**PRIMARY LEAVING NATIONAL EXAMINATION
2002-2003**

JUNE 2003

MATHEMATICS

Duration: Two hours

Marks:

/100

Instructions

Write your index number in full.

Answer all questions in section A.

In section B don't choose more than five questions.

Read each question carefully before answering it.

If the rough work is necessary, do it on another paper provided.

Show the necessary working clearly in the space below each question.

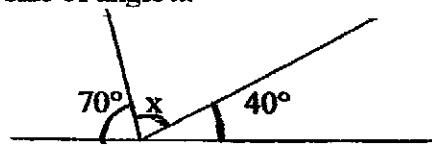
SECTION A (65 marks)

1. Multiply : 405.2×2.5 . **(1mark)**
2. Find the average of 4, 5, 8 and 3. **(1mark)**
3. Change the following Roman number XXV into an ordinary number. **(1mark)**
4. How many lines of symmetry does a square have ? **(1mark)**
5. Use one of the following symbols : > or < to complete the fractions :
0.65 $\frac{3}{5}$ **(1mark)**
6. Fill in the missing numbers. **(1mark)**
- | | | | |
|----|----|---|----|
| 3 | 4 | 5 | |
| 10 | 13 | | 19 |
7. Write in a short form :
 $3y + 5x - 2y + x$ **(1mark)**

8. In the diagram below all lines are straight.

Find the size of angle x .

(1mark)



9. Write the next two numbers in the following sequence: 1, 2, 3, 5, 8,

(1mark)

10. A boy got 210 marks out 300 marks in an examination.

Calculate the percentage marks the boy scored.

(1mark)

11. Express 20 in terms of its prime factors.

(1mark)

12. Calculate : $500 \div 0.25$.

(1mark)

13. Express 0.04 as a fraction in its simplest form.

(1mark)

14. Write the following words in numerals (numbers):

Fifteen thousand and one.

(1mark)

15. Simplify : $\frac{1}{8} \times 88 \times \frac{1}{11}$

(1mark)

16. Calculate : $24.59 + 5.41 - 4.5$.

(2marks)

17. Express 20 cm as a fraction of 2 m and simplify the answer.

(1.5mark)

18. Simplify : $5^2 + \sqrt{64}$

(1.5mark)

19. Add *1hr* and *40 minutes* and write the answer in seconds.

(1.5mark)

20. Simplify the following: $\frac{1}{2} + \frac{2}{3} - \frac{1}{6}$

(1.5mark)

21. Subtract and simplify the answer: $1\frac{1}{3} - \frac{5}{6}$ **(1.5mark)**

22. The width of a rectangle is 20 cm and its length is 30 cm.
Calculate the perimeter of the rectangle. **(1.5mark)**

23. Complete the following: $2.4 \text{ km}^2 + 2.4 \text{ hm}^2 = \dots \text{m}^2$ **(1.5mark)**

24. Range the following in ascending order: $\frac{1}{5}, \frac{11}{45}, \frac{21}{90}$. **(1.5mark)**

25. The radius of a circle is 5 cm . Calculate the circumference of the circle. Take $\pi = 3.14$. **(1.5mark)**

26. Calculate and simplify the following: $\left(\frac{2}{15} \div \frac{1}{3}\right) \times \frac{1}{2}$ **(2marks)**

27. Find the sum of the H.C.F. and the L.C.M. of 8 and 6.

(2marks)

28. Use a scale of 1 cm on paper to represent 10 km on land and find:

a) the length on the land when the length on the paper is 15 cm.

(1mark)

b) the length on the paper when the length on the land is 8 km.

(1mark)

29. 2000 is decreased by 16 %. Find the new number.

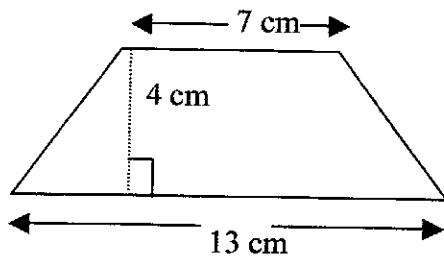
(2marks)

30. A car travels 140 km in 2 hours. If the car does not stop, find the speed of the car.

(2marks)

31. The weight of a liquid is 1360 g and its volume is 100 cm^3 . Find the density of the liquid. (2marks)

32. The diagram below is a trapezium whose height is 4 cm, short base is 7 cm and long base is 13 cm. Calculate the area of the trapezium. **(2marks)**



33. A man banked 40 000 Frw at a simple interest orate of 10 % per year. Calculate the man's interest after 3 years. **(2marks)**

34. Divide 4 000 kg in the ratio 3 : 5. **(2.5marks)**

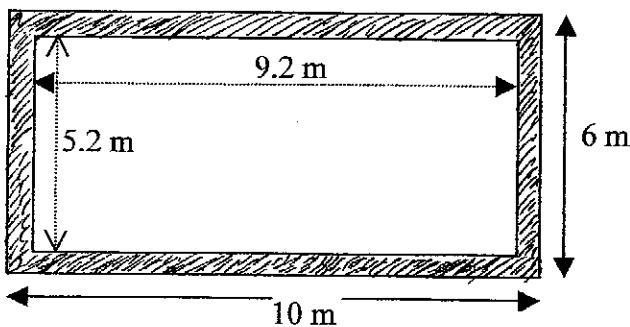
35. The sum of two whole numbers is 120. If the difference between the two numbers is 80, find the two numbers. **(2marks)**

36. 100 teachers mark mathematics exercise in 10 days. In how many days do 5 teachers mark the same number of mathematics exercise books ?
Assume all teachers mark equal numbers of mathematics exercise books. **(2.5marks)**

37. Aman bought a bed at 80 000 francs. He sold the bed and made a profit of 5 %.
How much money did the man sell the bed ? **(2.5marks)**

38. Paul and Peter share 2 100 Francs. Paul receives two times as much as Peter receives.
How much money does each person receive ? **(3marks)**

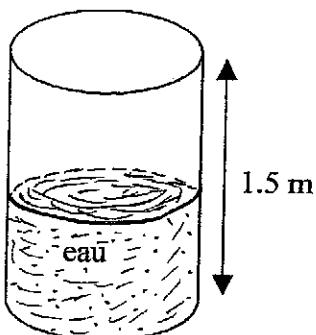
39. The figure below represents a rectangular garden with a path around it. The outer part of the path is also a rectangular. Calculate the area of the path which is the shaded part in the diagram. (3marks)



40. A cylindrical tank is half full of water. The radius of the tank is 0.7 m and the height is 1.5 m.

Calculate the volume of the water in the tank. Take $\pi = \frac{22}{7}$.

(3marks)



SECTION B (35 marks)

41. A sum of 60 000 francs is banked at a compound interest rate of 6 % per year. Calculate

a) The total interest after 3 years.

(6marks)

b) The total amount of money in the bank for the 3 years if no money was withdrawn. **(1mark)**

42. a) Simplify completely the following algebraic expression :

$$4(m - n + 5) - 3(m - 2n + 2)$$

(2marks)

b) Solve the equation: $\frac{x}{5} - \frac{1}{2} = \frac{3}{10}$

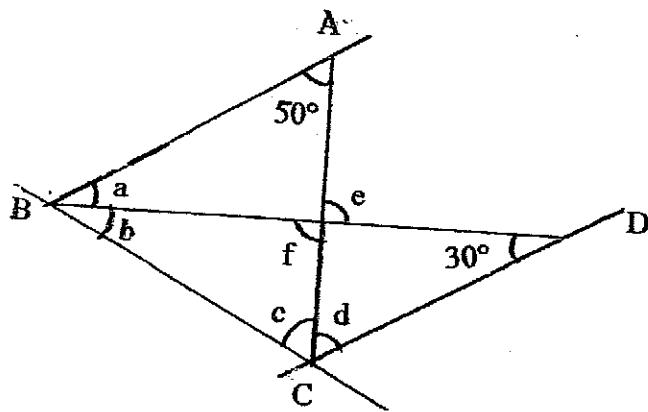
(3marks)

c) Find the value of $3ab - bc + 6a$, if $a = 2$, $b = 3$ and $c = 0$.

(2marks)

43. John is 25 years younger than his father. After 5 years, John's father will be 2 times as old as his son will be. Calculate the ages of the father and the son now. **(7marks)**

44. In the figure below, triangle ABC is an isosceles triangle and line AB is parallel to line CD. Angle BAC = 50° and angle BDC = 30° ; Calculate the sizes of angles a, b, c, d, and f. **(7marks)**



45. 40 children use 24 kg of sugar in 30 days. All children use equal quantities of sugar each day.

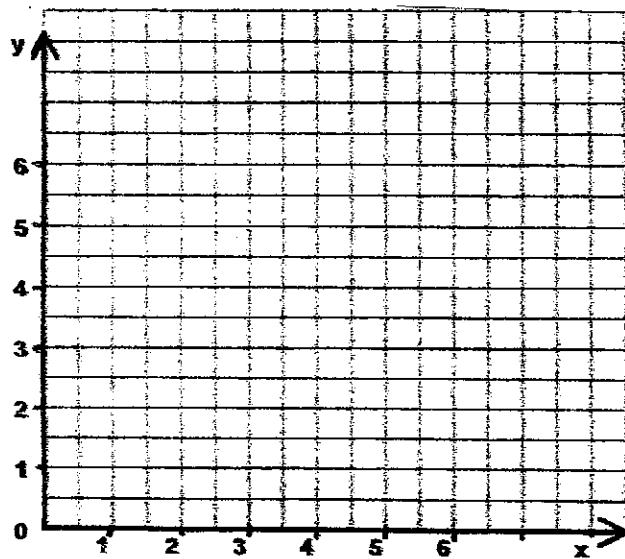
a) If there are 50 children, how many days would the children use 24 kg of sugar ? **(2.5marks)**

b) How many children would use 14 kg of sugar in 35 days ?

(4.5marks)

46. The distance from town A to town B is 200 km. A car leaves town A at 7.00 a.m. and travels at an average speed of 60 km/hr. On the same days a bus leaves town A at 8.00 a.m. and travels at an average speed of 90 km/hr. If both vehicles don't stop on the way, at what distance from town A does the bus catch up with the car ? **(7marks)**

47. You are given the following points and their coordinates: O(0, 0), A(1, 1), B(2, 2), C(3, 3), D(4, 4) and E(5, 5).



- Plot the coordinates of these points on the squared paper up and write the letters which correspond to the points.
- Join the points with a line.
- From the graph complete the coordinates of: F(0,5,), G(....., 2,5).

(7marks)

48. A mother went to a market and bought 3 kg of meat at 900 francs per kilogram, 10 kg of sugar at 450 francs per kilogram and 5 kg of rice at 400 francs per le kilogram. The mother was allowed a discount of 10 % from the total cost.

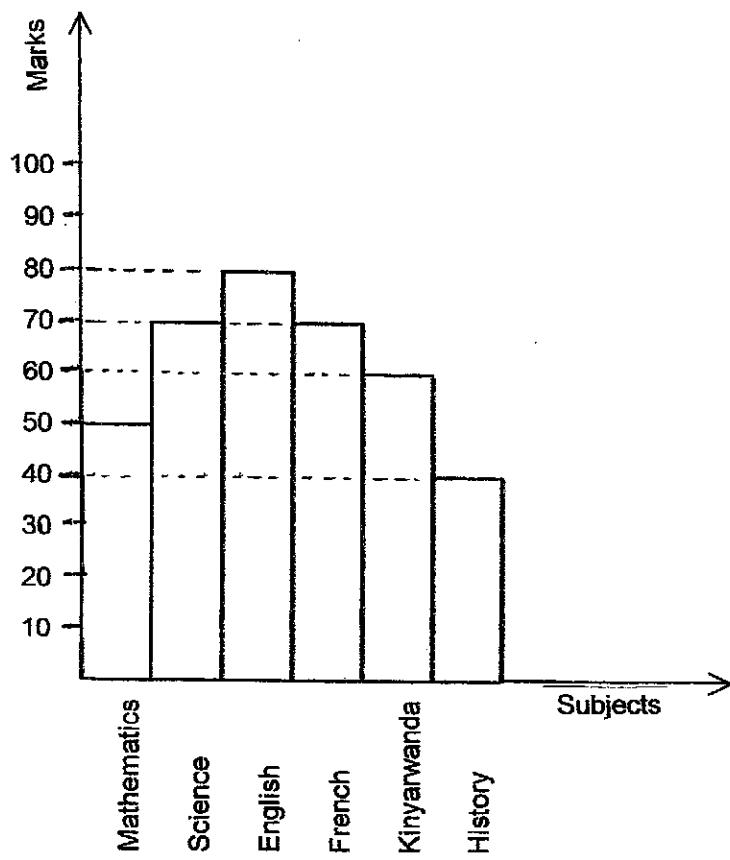
- How much money did the mother pay ?

(4.5marks)

- If the mother had two 5 000 francs bank notes and she wanted her balance in coins of 20 francs, Find the number of coins received by the mother.

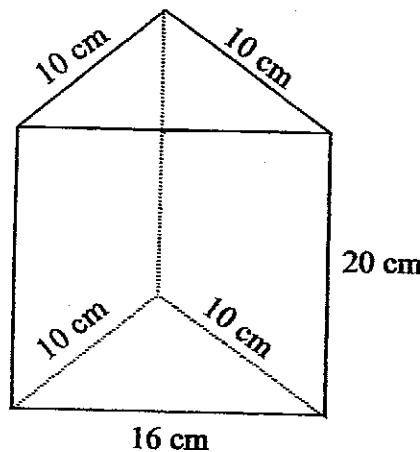
(2.5marks)

49. The graph below shows marks a pupil scored in the following subjects : Mathematics, Sciences, English, French, Kinyarwanda and History.



- What was the highest mark scored ? (1mark)
- In which subjects did the pupil score the same marks. (1mark)
- In which subject did the pupil score 60 marks ? (1mark)
- How many marks more did the pupil in mathematics than in history ? (1mark)
- What is the difference between the highest mark and the lowest mark ? (1mark)
- Calculate the average mark scored by the pupil. (2marks)

50. The figure below is a prism with a triangular base. The base is an isosceles triangle whose base is 16 cm and height is 6 cm. The height of the prism is 20 cm.



Calculate a) the total area of the prism.

(5marks)

b) the volume of the prism.

(2marks)

BLANK PAGE