

**RWANDA NATIONAL EXAMINATIONS COUNCIL**



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

<b><u>Pupil's complete index number</u></b>			
<i>Province</i>	<i>District</i>	<i>Exam Centre</i>	<i>Student</i>
<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 :  $405.2 \times 2.5$ .

**(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 :

$$0.65 \dots\dots \frac{3}{5}$$

**(1mark)**

6. Fill in the missing numbers.

**(1mark)**

3	4	5	
10	13		19

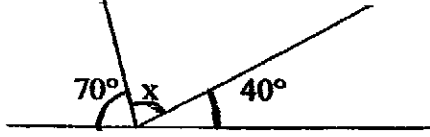
7. Write in a short form :

$$3y + 5x - 2y + x$$

**(1mark)**

8. In the diagram bellow 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:  $2.4 \text{ km}^2 + 2.4 \text{ hm}^2 = \dots\dots\text{m}^2$

*(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.

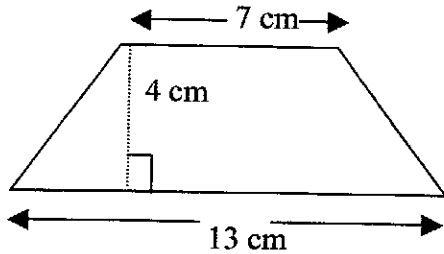
**(2marks)**

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  $100 \text{ cm}^3$ . 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)

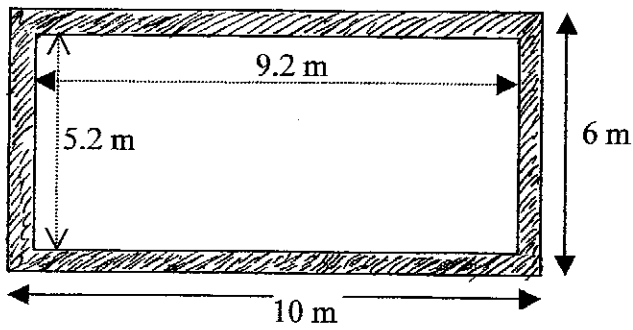
36. 100 teachers mark mathematics exercise in 10 days. In how many days do 5 teachers mark the same number of mathematics exercise books ?  
Assume all teachers mark equal numbers of mathematics exercise books. **(2.5marks)**

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)**

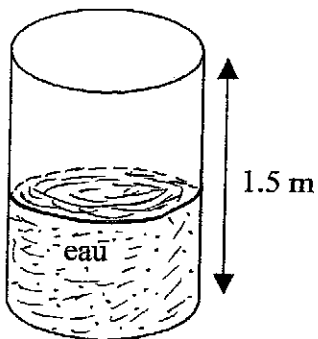
38. Paul and Peter share 2 100 Francs. Paul receives two times as much as Peter receives.  
How much money does each person receive ? **(3marks)**



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:  $\frac{x}{5} - \frac{1}{2} = \frac{3}{10}$

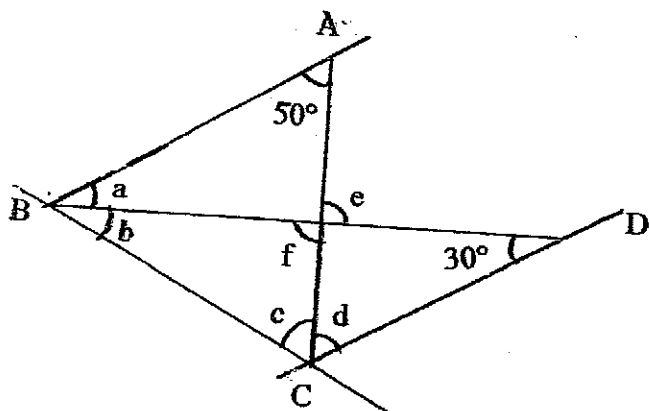
**(3marks)**

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)



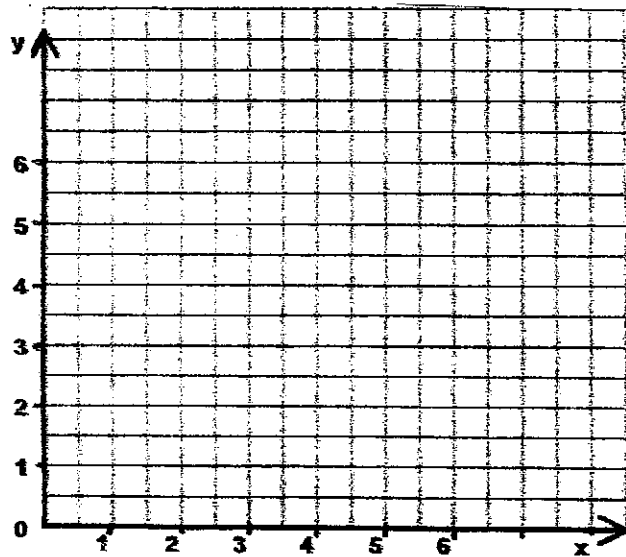
45. 40 children use 24 kg of sugar in 30 days. All children use equal quantities of sugar each day.

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).



- a) Plot the coordinates of these points on the squared paper up and write the letters which correspond to the points.
- b) Join the points with a line.
- c) 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.

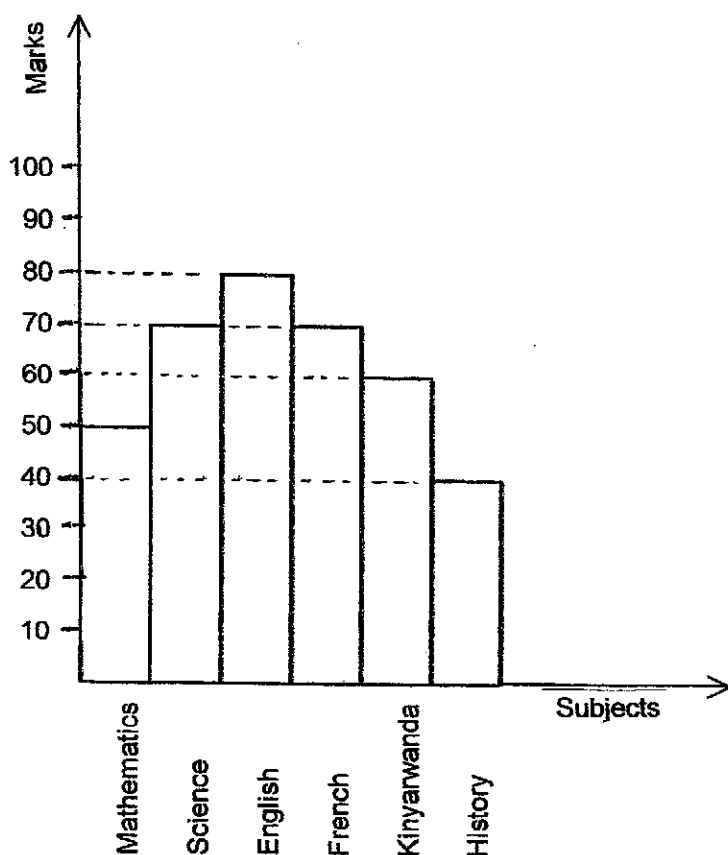
- a) How much money did the mother pay ?

*(4.5marks)*

- b) 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.



a) What was the highest mark scored ?

**(1mark)**

b) In which subjects did the pupil score the same marks.

**(1mark)**

c) In which subject did the pupil score 60 marks ?

**(1mark)**

d) How many marks more did the pupil in mathematics than in history ?

**(1mark)**

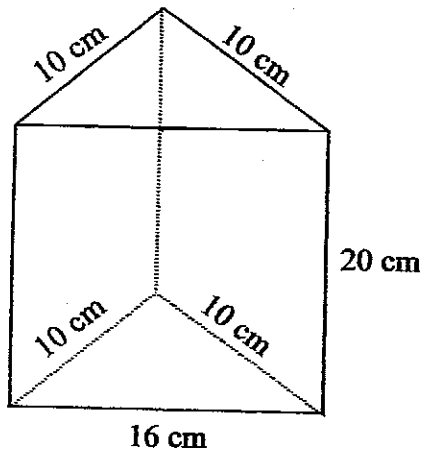
e) What is the difference between the highest mark and the lowest mark ?

**(1mark)**

f) 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**