

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.

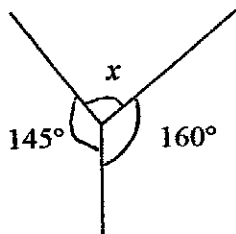
(2)

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

(2)

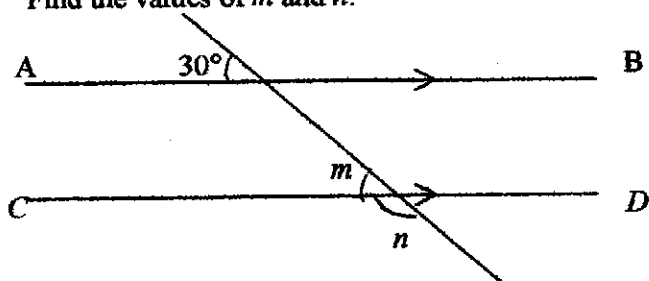
6. Find the value of x in the diagram below.

(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)

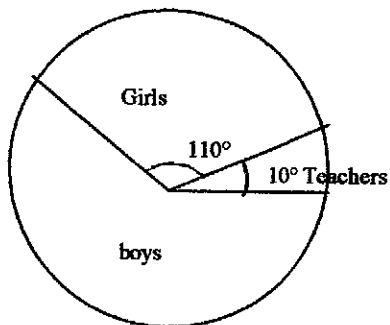
2	4	5	?	10
5	9	?	19	21

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: $\frac{3}{5}$, $\frac{60}{125}$, $\frac{39}{75}$, 0.56.	(3)

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)

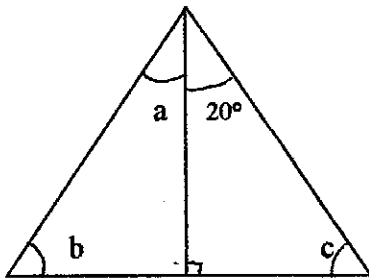
(2)

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. Find the sizes of angles a, b and c. (3)



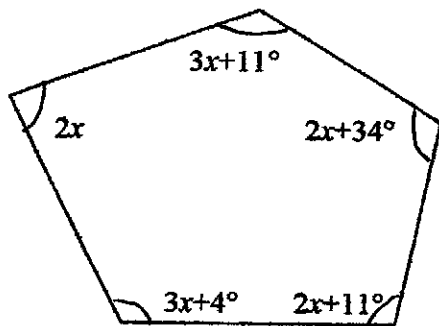
SECTION B (35 marks)

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)

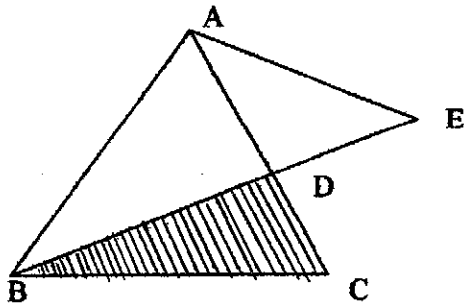
32. The figure below is an irregular polygon. Find the size of each angle. (7)



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

(1)

(1)

(1)

(1)

(2)

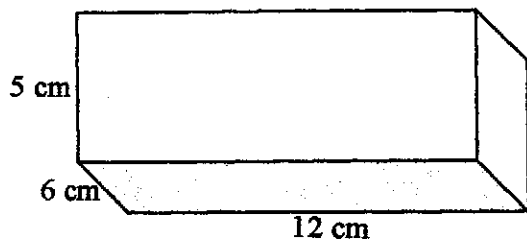
(1)

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)

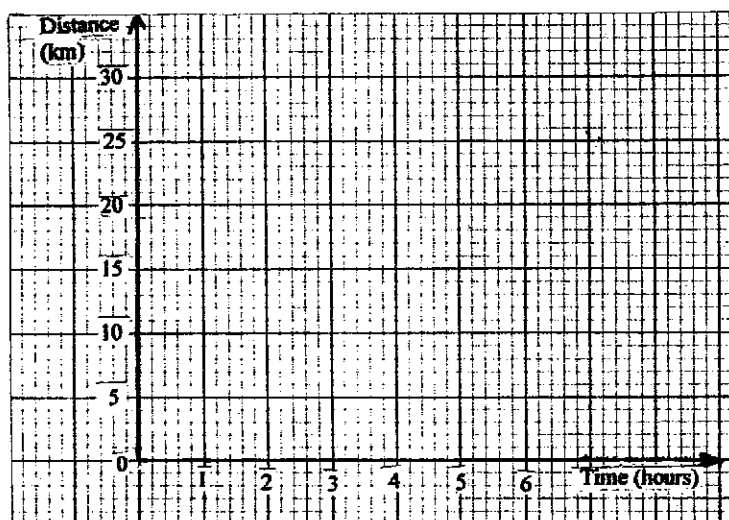
(b) Calculate the total surface area of the cuboid (3)

(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