UGANDA NATIONAL EXAMINATIONS BOARD

PRIMARY LEAVING EXAMINATION
2011

MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No.

Candidate's Name ....

Candidate's Signature ....

School Name ....

District Name ....

FOR EXAMINERS'
USE ONLY

Read the following instructions carefully:

1. The paper has **two** sections: **A** and **B**.

2. Answer **all** questions. **All** answers to both sections **A** and **B** must be written in the spaces provided.

3. **All** answers must be written using a blue or black ball-point pen or ink. Diagrams should be drawn in pencil.

4. No calculators are allowed in the examination room.

5. Unnecessary changes of work may lead to loss of marks.

6. Any handwriting that cannot easily be read may lead to loss of marks.

7. Do **not** fill anything in the boxes indicated "**For Examiners' Use Only**" and those inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	MARKS	EXR'S NO.
1 – 10		
11 – 20		
21 – 30		
31 – 32		
33 – 34		
35 – 36		
37 – 38		
39 – 40		
41 – 42		
Total		

Turn Over

1. Work out: 3 2
                   x   3
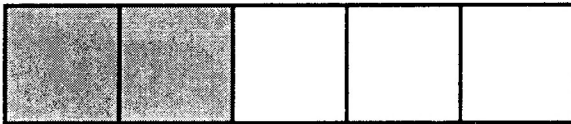   ____

2. Write in figures: Thirty eight thousand, fifty.

3. Simplify: $6a - 4a + a$.

4. Write 54 in Roman numerals.

5. Simplify: $^+8 - {}^-2$

6. Write down the fraction of the shaded part of the drawing below.

7. Change 750 centimetres into metres.

8. Using a pair of compasses, a ruler and a pencil **only**, draw an angle of 60° in the space provided below.

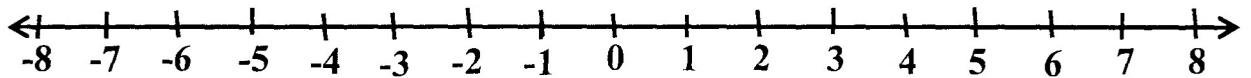**9.** Given set $C = \{2,\ 7,\ 10,\ 17\}$ and set $D = \{5,\ 6,\ 7,\ 11,\ 15\}$, find $C \cap D$.

10. In a basket, 4 rotten eggs are mixed up with 3 good eggs. If an egg is picked at random from the basket, what is the probability of picking a good egg?
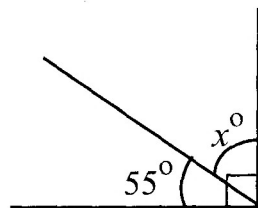
11. Work out: $2.0 \div 0.5$

12. Simplify: $\dfrac{5}{9} - \dfrac{2}{9}$

13. On the number line below, show 4 x 2.

$$\xleftarrow{\;\;\;}\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\;\;|\;\xrightarrow{\;\;\;}$$

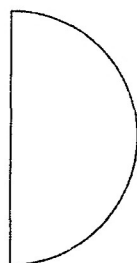-8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8

14. Five pupils scored the following marks in a Mathematics test: 55, 72, 61, 93 and 60. Find the median mark.

15. In the diagram below, find the value of x.

55° x°

16. It started raining at 9:45 a.m. and stopped at 1:25 p.m. For how long did it rain?

17. How many lines of folding symmetry does the figure below have?

18. Find the next number in the following sequence: 1, 8, 27, 64, ...

19. Given that $p = {}^-4$, $q = 3$ and $c = {}^-2$, find the value of $\dfrac{pq}{c}$.
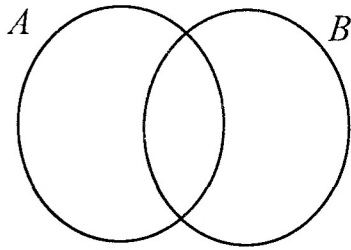
20. Solve: $2(3x - 6) = 24$

21. The circumference of a circle is 88 cm. Find its radius. (Take $\pi = \dfrac{22}{7}$)

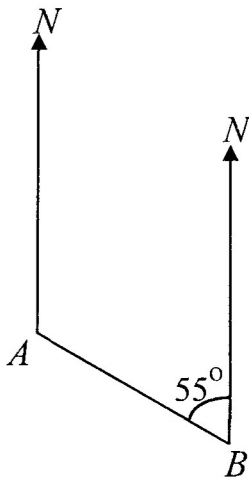**22.** Change 11011_{two} to base ten.

23. Work out:
$$\begin{array}{r} 6885 \\ + 8437 \\ \hline \end{array}$$

24. In the Venn diagram below, shade the area $(A \cap B)'$

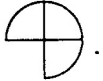**25.** In a market, one buys 5 mangoes at Sh1,500. How many similar mangoes does one buy with Sh1,200?

**26.** In the figure below, find the bearing of town B from town A.

27. A man drove a car steadily at a speed of 25 metres per second. Change this speed into kilometers per hour.

28. Arrange the following fractions in order beginning with the smallest:
$\frac{2}{7}$, $\frac{2}{9}$ and $\frac{1}{3}$.

29. If represents 1500 pupils in a school, find the number of pupils represented by .

30. A farmer banked Sh126,000 for 4 months at a simple interest rate of 8% per year. Find his interest.
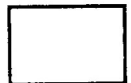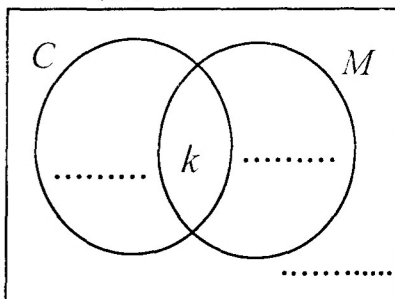
SECTION B: (70 MARKS)
(Marks for each part of the question are indicated in the brackets)

31. At a party attended by 60 pupils, 42 ate Chicken (C), ($k+8$) ate Meat (M) only, k pupils ate both chicken and meat while 6 did not eat any of the two items.

(a) Use the information given above to complete the Venn diagram below. (*3 marks*)

$n (\mathcal{E}) = 60$

8

(b)   Find the value of *k*.   (*2 marks*)

(c)   If a pupil is picked at random, what is the probability that the pupil ate meat?   (*1 mark*)

32.   Fatuma went to the market and bought the items shown in the table below.

(a)   Complete the table.   (*5 marks*)

ITEM	QUANTITY	PRICE	AMOUNT
Eggs	15	Sh300 per egg.	Sh.................
Meat	.... kg	Sh6,000 per kg.	Sh15,000
Cooking oil	$\frac{1}{2}$ litre	Sh .... per litre.	Sh2,000
Sugar	$1\frac{1}{2}$ kg	Sh3,000 per kg.	Sh.................
TOTAL EXPENDITURE			Sh.................

(b)   If Fatuma went to the market with Sh30,000, how much did she remain with?   (*1 mark*)

33. (a) Using a pair of compasses, a ruler and a pencil **only**, construct a triangle PQR in which $PQ = 6$ cm, angle $RPQ = 60^\circ$ and angle $PQR = 45^0$. Construct a perpendicular from R to meet PQ at Y. *(5 marks)*
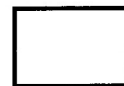
(b) Measure RY *(1 mark)*

34. A teacher recorded marks of P7 pupils in a Mathematics test as shown in the table below. ***Study it carefully and use it to answer the questions that follow.***

Marks	72	85	90	95	96
Number of Pupils	4	12	1	4	5

(a) Find the range of the marks. *(1 mark)*

(b) What is the modal mark? *(1 mark)*

(c)   Work out the mean mark of the pupils who scored above 85.
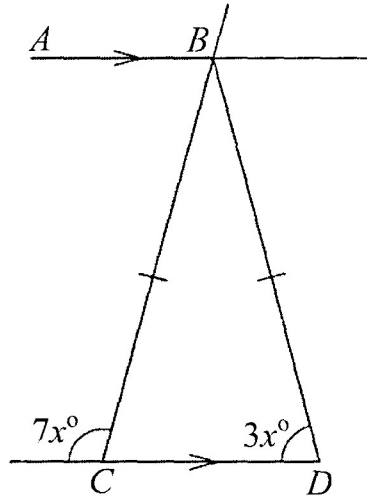
(3 marks)

35.   The rates at which a bank buys and sells United States dollars and Kenya shillings are given in the table below.

Currency	Rate at which a bank buys	Rate at which a bank sells
One U.S Dollar One Kenya Shilling	Ug.Sh2,800 Ug.Sh28	Ug.Sh2,900 Ug.Sh30

(a)   If a trader has 300 dollars and 500 Kenya shillings, how much money in Uganda shillings can he get from the bank?   *(4 marks)*

(b)   Peter has Ug. Sh1,160,000 , how many U.S. dollars can he get from the bank ?   *(2 marks)*

36. In the diagram below, line AB is parallel to CD and BCD is an isosceles triangle. *Study it carefully and use it to answer the questions that follow.*
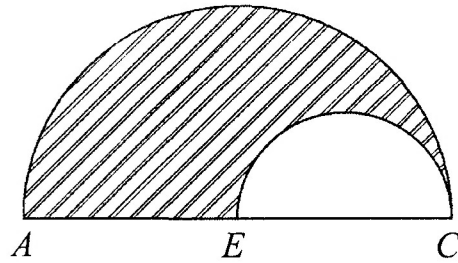

(a) Find the value of x.

(*3 marks*)

(b) Work out the size of angle ABC.

(*2 marks*)

37. In the diagram below, $AC = 56$ cm and EC is half of AC. Find the area of the shaded part. (Take $\pi = \dfrac{22}{7}$). *(6 marks)*
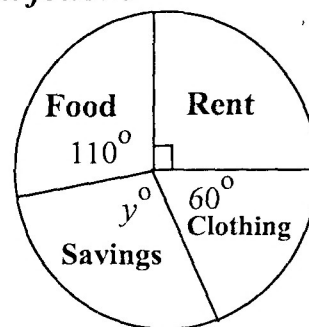

38. (a) Solve: $6x - 9(x - 2) = 3$. *(3 marks)*

(b) Solve: $3 + 4m > 12 + 3m$. *(3 marks)*

Turn Over

39. (a) Work out: $\dfrac{0.28 \times 0.08}{1.4 \times 0.4}$ (*3 marks*)

(b) Work out: $1\frac{2}{5} \times 1\frac{1}{2} \div 3\frac{1}{2}$ (*3 marks*)

40. The Pie-chart below shows how Matata spends his monthly salary. ***Study it carefully and answer the questions that follow.***

(a) Find the value of y. (*2 marks*)

(b) If he spends Sh36,000 on clothing, how much does he earn per month? (*2 marks*)

(c)   How much more money does he spend on food than he saves? (*3 marks*)

41.   (a)   What is the place value of the digit 4 in the number 340017 ?

(*1mark*)

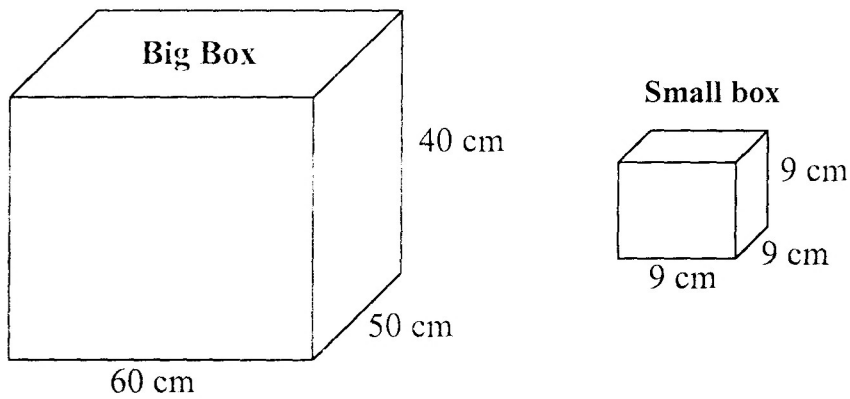(b)   Simplify: $\dfrac{b^3 \times b^5}{b^2 \times b^4}$ (*2 marks*)

(c)   Expand 789 using powers of 10.   (*2 marks*)

42. The diagram below shows a big box 60 cm long, 50 cm wide, 40 cm high and a small box 9 cm long, 9 cm wide, and 9 cm high.

Study it carefully and answer the questions that follow.

If such small boxes are to be packed into the big box,

(a) find the number of small boxes that will be packed in the first layer of the big box. *(2 marks)*

(b) how many layers will fill the big box ? *(2 marks)*

(c) how many small boxes will fill the big box ? *(2 marks)*

16   **END.**