Dr. Bbosa Science

UGANDA NATIONAL EXAMINATION BOARD

PRIMARY LEAVING EXAMINATION

2007

MATHEMATICS

Time allowed: 2hours 15 minutes

Digital Teachers
Nurture your dreams
digitalteachrs.co.ug

Index No:

Candidate's Name……..

Candidate's signature……..

District
Name……

Read the following instructions carefully

1. This paper has two sections **A** and **B**.
2. Section A has 30 short answer question (30 mark)
3. All the working. For both section A and B must be shown in the spaces provided
4. All working must be done using a blue or black ball
   Point pen or fountain pen Diagram should be drawn in pencil
5. No calculators are allowed in the examination room.
6. Unnecessary change of work may lead to loss of marks
7. Any hand writing that cannot easily be read may lead to loss of marks
8. Do not fill anything in the boxes indicated:

"For examiners'. 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		

Turnover

SECTION A

(Question 1 t 30 carry one mark each)

1. Workout: 4 3
   x 2
   ---
   8 6

2. Write in figure one thousand thirteen:

   1000
   + 13
   1013

3. Simplify: 6 x- 5m + 3m- 4x
   Collect like terms
   = 6x-4x + 3m -5m
   = 2x-2m

4. Workout: $t^6 \div t^2$

   $= t^{(6-2)} = t^4$

5. solve 3 – X =2X

   3 = 2x + x = 3x

   X = 1

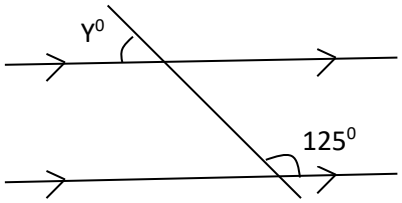
6. Simplify -5- $^+$5]

   -5 -5 = -10

7. Write 99 in roman number find valve of Y in the figure below

   99 = 90 + 9 = XC + IX = XCIX

8. Find the valve of Y in the figure below.

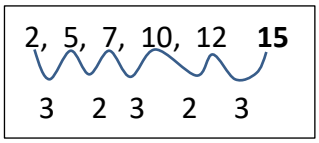


Interior angle + exterior angle = 180^0

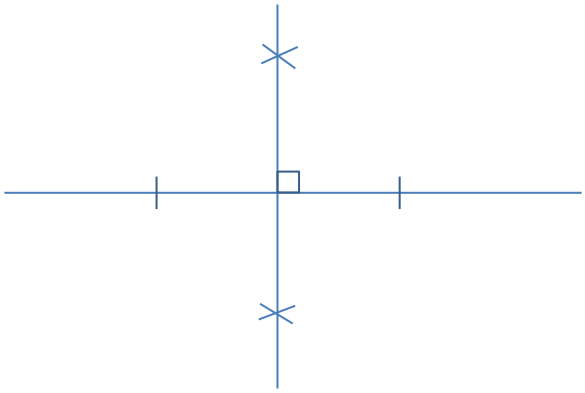
$Y + 125 = 180^0$

$Y = 55^0$

9. Find the next number in the sequence 2, 5, 7, 10, 12_____



10. Using a ruler, a pencil and a pair of compasses only, construct an angle of 90^0 in the space



11. Express 36 as a percentage of 80.

$= \frac{36\ x\ 100}{80} = 45\%$

12. Find the median of the following numbers: 3,0, 5,4, 2,

Arrange in order: 0, 2, 3, 4, 5

The median I s the middle number = 3

13. Given that x=3, y=4 and z=6, find the value of $\frac{xy}{z}$

Substitute for x, y and z = $\frac{3\ x\ 4}{6} = \frac{12}{6} = 2$

14. Change 12400metres to kilometers

1000m = 1km

12400m = $\frac{12400\ x\ 1}{1000} = 12.4km$

15. The radius of a wheel of bicycle is 35cm. Find the circumference of the wheel.

(Take π=$\frac{22}{7}$)

C = $2\pi r = 2\ x\ \frac{22}{7}\ x\ 35 = 220m$

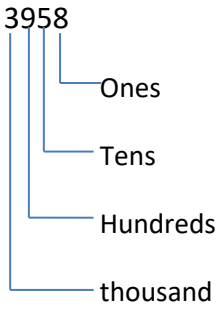
16. Change 11010 $_{two}$ to base ten.

$1^4 1^3 0^2 1^1 0^0$ $_{two}$ = 1 x 2^4 + 1 x 2^3 + 0 x 2^2 + 1 x 2^1 + 0 x 2^0

= 16 + 8+ 0 + 2 + 0

= 26_{ten}

17. Find the sum of the values of the digits 3 ad 5 in the number 3958.



Value of 3 = 3 x 1000 = 3000

Value of 5 = 5 x 10 = 50

Total 3050

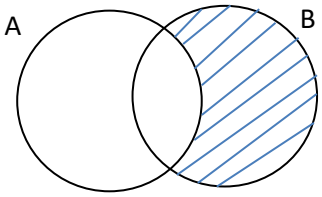
18. The first half of the football match ended at 5.25 p.m. after being played for 45 minutes. At what time did the match start?

5: 25

\- 45

4: 40 pm

19. In the diagram below, shade the region that represents only the members of set B



20. Simplify: $\frac{0.12-0.06}{0.06} = \frac{0.06}{0.06} = 1$

21. Find the square root of $5\frac{4}{9}$

Change to improper fraction = $\frac{49}{9}$

$$\sqrt{5\frac{4}{9}} = \sqrt{\frac{49}{9}} = \frac{\sqrt{49}}{\sqrt{9}} = \frac{7}{3} = 2\frac{1}{3}$$

22. James sold a cow at shs 320,00. If he made a profit of shs 80,000, find the price at he bought the cow.

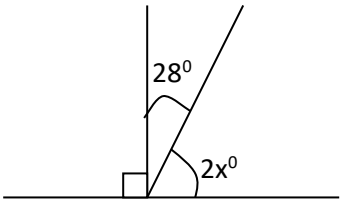
    Let the cost price be X

    80000 = 320000 – x

    x = 320000 -80000

    = 240000

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



Angle sum on a straight line add up to 180^0.

90 + 28 + 2x = 180

118 + 2x = 180

2x = 180 – 118

= 62^0

x = 31^0

24. Workout: $1\frac{1}{12} - \frac{5}{6}$.

$$\frac{13}{12} - \frac{5}{6} = \frac{13\ x\ 1 - 5\ x 2}{12} = \frac{13-10}{12} = \frac{3}{12} = \frac{1}{4}$$

25. The total number of black and blue pens is 12. If the probability of picking a blue pen from the bag is $\frac{2}{3}$, how many black pens are in the bag?

Number of blue pens = $\frac{2}{3}\ x\ 12 = 8$

Number of black pens = 12 – 8 = 4pens

26. How many lines of symmetry does a rectangle given below have?

A rectangle has two lines of symmetry

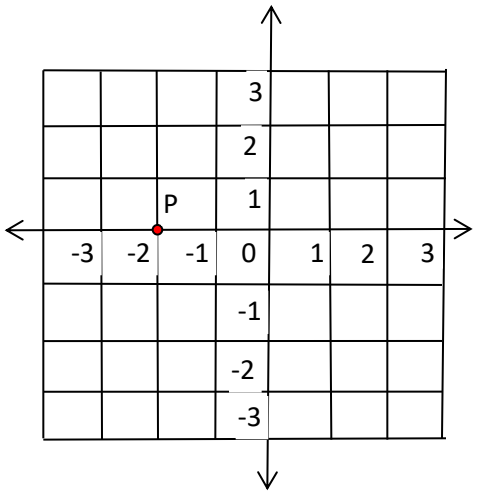
27. Maria has a bundle of five thousand shillings notes numbered consecutively from AP 534201 TO AP 534300. How much money does she have?

The number of shs 5000 notes= (534300 – 534201) + 1 = 99+ 1 = 100

NB: we add 1 because 534201 is inclusive.

100 notes of shs. 5000 give 100 x 5000 = 500000.

28. Use the graph below to answer the question that follows.



What are the co-ordinates od points P? (-2, 0)

29. Solve the inequality: $1+\frac{1}{2}x>2$.

$\frac{1}{2}x\ > 2 - 1$

$x > 1x2$

$x\ > 2$

30. A bank gives a simple interest rate of 12% per annum. What will be the interest on sh.400,000 banked for 9 months?

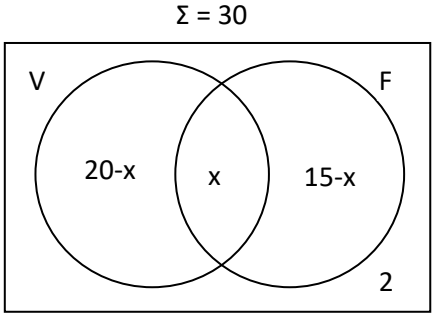
I = P x R x T = 400000 x $\frac{12}{100}$ x $\frac{9}{12}$ = shs. 36,000

SECTION B

(Marks for each part of the question are indicated in the brackets.)

31. In a class of 30 students ,20 play, volleyball(V), 15 play football(F), (x) play both volley ball and football and 2 do not play any of the two games.

(a) Use the information given above to complete the Venn diagram below. (2 marks)



(b) Find the value of x (2 marks)

20 – x + x+ 15 – x + 2 = 30

37 – x = 30

x = 7

(c) Find the number of student who play only one game. (2 marks)

The number of students that play only one game = 20 -x + 15 -x

= 35 -2x

= 35 – 2 x7

= 21

32. Betty was given sh. 20,000 to buy thing to things to take to school and she bought the following:

3 dozen of exercise books at 2,800 per dozen.
4 bars of washing soap at sh. 900 per bar.
4 tablets of bathing soap at sh.1,200 per tablet.
2 tubes of tooth paste at sh. 800 per tube.

(a) How much money did she spend altogether? (05 marks)

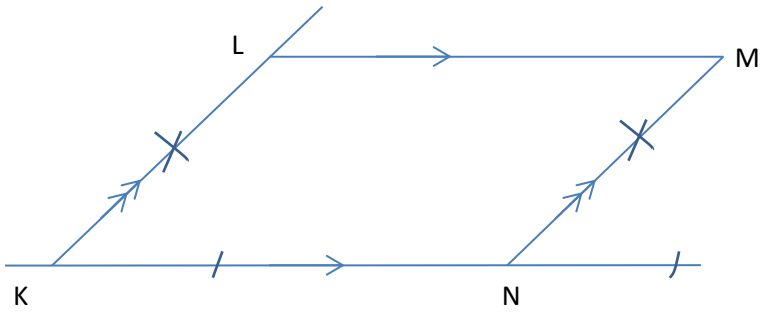
Item	Quantity	Rate	cost
Exercise book	3daozen	2,800	8.400
Washing soap	4 bars	900	3600
Bathing soap	2 tables	1200	4800
Tooth paste	2 tubes	800	1600
Total cost			18,400

(b) How much money did she remain with? (02 marks)

The money he remained with = 20000 – 18,400 = 1,600

33. Using a ruler, a pencil and a pair of compasses only, construct a parallel gram KLMN in which KL =4cm, LM= 6 cm and angle NKL=60^0

(06 marks)



(b) Length KM = 9.0cm

34. (a). Bbosa`s poultry farm produces 3,000 eggs in a day. If the eggs are packed in trays of 30 eggs each, how many trays of eggs does he produce in a week? (03 marks)

Number of eggs produced per week = 3000 x 7 = 21000

30 eggs = 1 tray

21000 eggs = $\frac{21000}{30} = 700\ trays$

(b) If each tray costs sh.2,700, how much does he get in a week? 02 marks)

1 tray cost 2,700

700 trays cost 700 x 2700 = 1, 890, 000

35. Kato wrote three-digit numbers using the digits 1, 3 and 6.

(a) Write down all the possible 3-digit number greater than 300 that kato wrote.

(04 Marks)

316, 361, 613, 631

(b) What was the probability of Kato writing an even number?

(01 mark)

Only one number (316) is even

∴ the probability of even number = $\frac{1}{4}$

36. Milk was mixed with water to make tea. If 14 litres of milk was used and this was 40% more than the amount of water in the tea, how much tea was prepared?

(05 marks)

Let the percentage of water in the tea = x, then the percentage of milk = x + 40

x + x + 40 = 100
2x + 40 = 100
2x = 100 – 40
2x = 60
$\frac{2x}{2} = \frac{60}{2}$
x = 30

Percentage of milk = 30 + 40 =70%

Let the amount of tea prepared be X

$\frac{70}{100}x = 14$

x = $\frac{14\ x\ 100}{7o} = 20l$

37. (a) Given that $\frac{2}{3}$ of Peter`s salary is equal to $\frac{3}{4}$ of Mary `s salary, find Peter`s salary if Mary`s salary is sh.120,000 (03 marks)

Let peter's salary be x

$\frac{2}{3}x = \frac{3}{4}\ of\ 120000$

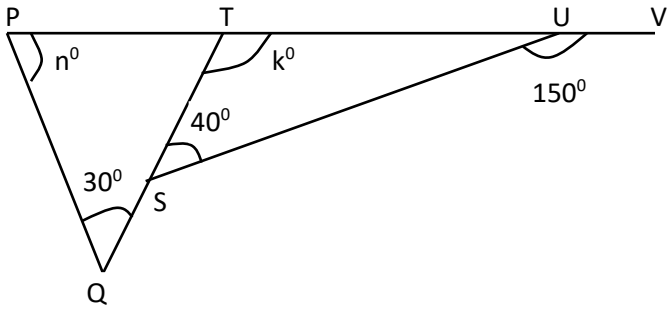
$x = \frac{3\ x3\ x\ 12000}{4\ x\ 2} = 135{,}000$

Hence Peter's salary is shs. 135. 000

(c) Express Mary`s salary as a fraction of Peter ‘s salary. (02 marks)

$$\frac{Mary's\ salary}{Peter's\ salary} = \frac{120\cancel{000}}{135\cancel{000}} = \frac{120}{135} = \frac{8}{9}$$

38. In the diagram below, PTUV is a straight line, angle TSU =40^0, angle *SUV*=150^0 and angle *PQT*=30^0.use the given information to find the value o the angle maerked k and n. (04 marks)



K + 40 = 150

K = 110^0

n + 30 = 110

n = 80^0

39. (a) solve: $\frac{1}{2}$m + 7 = 2m -2

(03 arks)

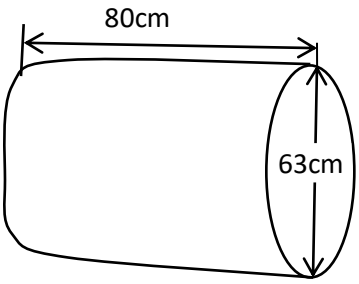
multiply by 2 throughout
m + 14 = 4m -4
collect like terms
3m = 18
m = 6

(b) Solve $\frac{10}{n}$ + 4 =24

(03 marks)

Multiply by n
10 + 4n = 24n
Collect like terms
20n = 10
$\frac{\cancel{20}n}{\cancel{20}} = \frac{1\cancel{0}}{2\cancel{0}} = \frac{1}{2}$
n = $\frac{1}{2}$

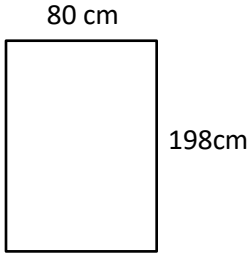
40. The diagram below shows a metallic drum which was cut open to form a door sheet, use it to answer the question that follow.



(a) Find the length of the door which was made out of the sheet.
(Take π=$\frac{22}{7}$) (03 marks)

The length of the drum = circumference of the circle
= πD
= $\frac{22}{7}\ x\ 63$
= 198cm

(b) Work out the area of the door in meters (03 marks)



Area = L x W
= 80 x 198
= 15840cm^2

41. (a) work out $\frac{2.7\times4.8}{2.4\times3.6}$

(03 marks)

= (2.7 x 4.8) ÷ (2.4 x 3.6)

= $\frac{27\ x\ 48}{10\ x\ 10} \div \frac{24\ x\ 36}{10\ x\ 10}$

= $\frac{27\ x\ 48}{\cancel{10}\ x\ \cancel{10}}\ x\ \frac{\cancel{10}\ x\ \cancel{10}}{24\ x\ 36}$

= $1\frac{1}{2}$

(c) Simplify: $1\frac{1}{6} \times 1\frac{1}{7} \div 2\frac{1}{3}$ (03 marks)

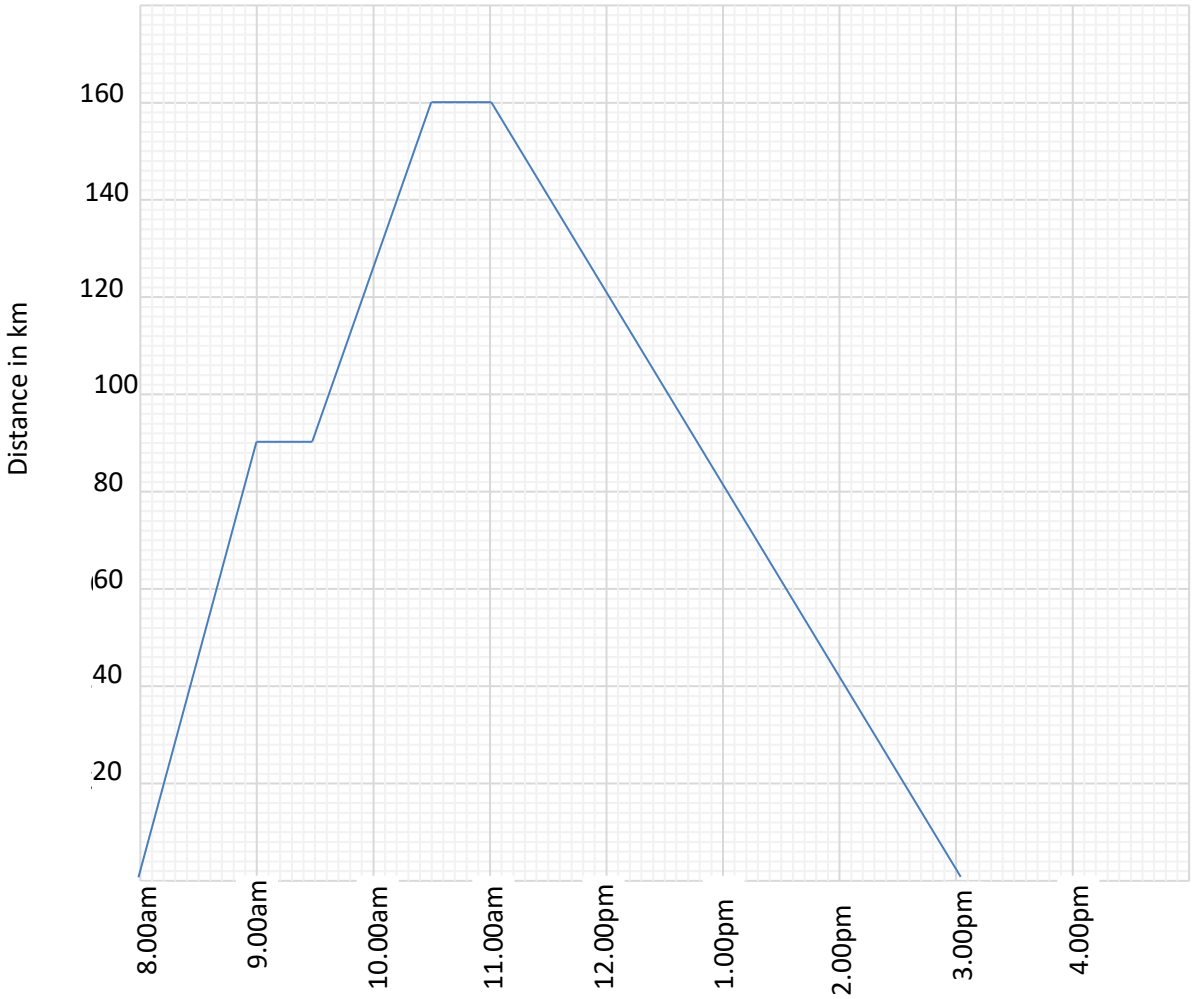
By using BODMAS

Division first $1\frac{1}{6}\ x\ \left[1\frac{1}{7} \div 2\frac{1}{3}\right] = 1\frac{1}{6}\ x\ \left[\frac{8}{7} \div \frac{7}{3}\right] = 1\frac{1}{6}\ x\ \left[\frac{8}{7}\ x\frac{3}{7}\right] = 1\frac{1}{6}\ x\ \frac{24}{49}$

$= \frac{7}{6}\ x\frac{24}{49} = \frac{4}{7}$

42. Mutono left town X at 8.00 a.m and drove at 90km per hour for one hour to town Y. He rested for half an hour at town Y. He left town Y and drove for one hour at 70km per hour to town Z. He rested for half an hour at town Z .he then left town Z and drove to town X at a steady speed of 40 km per hour.

(a) draw Mutono`s journey on the graph provided on the next page.



(b) Work out Mutono`s average speed for the whole journey (03 marks)

Speed = $\frac{distance}{time} = \frac{160\ x\ 2}{7} = 45\frac{5}{7}\ km/hr$

END