Dr. Bbosa Science

UGANDA NATIONAL EXAMINATION BOARD

PRIMARY LEAVING EXAMINATION

2000

MATHEMATICS

Time allowed: 2hours 15 minutes

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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

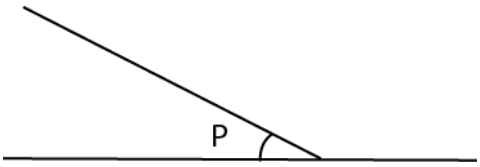
1. Add: 356 + 644

356

+ 644

1000

2. Find the size of the angle P in the figure below:



$P = 40^0$

3. Norah will celebrate her birthday next week. What is the probability that she will celebrate it on Sunday?

Probability = $\frac{1}{7}$

4. Find the next number in the sequence: 1,4,813, 19, …..,

1, 4, 8, 13, 19, 26.....

+3 +4 +5 +6 +7

5. Simplify: -4 + *-2* = *-6*

6. Fatuma had shs. 5,000/= If she used 10% of her money to buy soap, what was her balance?

Money used to buy soap = $\frac{10}{100}$ 5000 = 500

Balance = 5000 – 500 = 4500

7. Add: $101_{two} + 11_{two}$

101_{two}

$+ 11_{two}$

1000_{two}

8. If a = 55 and b = 45, find the value of (a + b) (a - b).

Substituting for a and b

(55 + 45)(55 – 45)

(100)(10)

=1000

10. If the cost of buying 300 Kenya Shillings is 6,000 Uganda Shillings, how many Kenya Shillings can 42,000 Uganda Shillings buy?

6000 uganda shillings by 300 kenya shillings

42,000 Uganda shillings will by $\frac{300\ x\ 42000}{6000} = 2100\ Kenya\ shillings$

11. Subtract: 80.71 from 89.9

89.90

- 80.71

9.19

12. Write in words; 90,090

Ninety thousands and ninety

13. Simplify $\frac{1}{2} \div \frac{1}{4}$

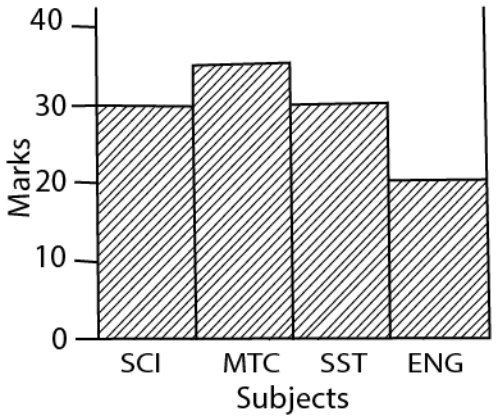
$\frac{1}{2} \div \frac{1}{4} = \frac{1}{2}\ x\ \frac{4}{1} = 2$

14. Peter walked 0.15km. What distance did he cover in metres?

1km = 1000m

0.15m = 0.15 x 1000 = 150m

15. The graph below represents marks scored in the four subjects by a pupil in P.6. Which subject was done best?



Mathematics was done best

16. On a map 1cm represents 500km. A line is drawn on the map to represent 250km of road. What is the length of the line on the map?

500km are represented by 1cm

250km are represented by $\frac{1\ x\ 250}{500} = \frac{1}{2}$ cm or 0.5cm

17. Find 202÷2= 101

18. Find the median of the following numbers: 0, 9,1,7, 5.

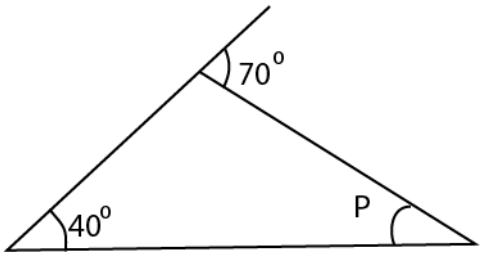
Arrange the numbers in ascending order: 0, 1, 5, 7, 9

The median is the middle number = 5

19. If Set S= {0,2,4,6,8} and B = {1,2, 3,4, 5}, find A∩B.

A ∩ B = {2,4,) intersection is a set of similar numbers

20. Find the value of angle P in the figure below:



Two opposite interior angles = exterior angle

40 + P = 70

P = 30^0

21. Solve 3x-3= 15+x

3x-3= 15+x

Collect like terms

3x-x = 15 + 3

2x = 18

x = 9

22. Kintu put Shs 40,000 in Stanbic Bank. If the interest rate was 10% per year, how much simple interest did he get after 9 months?

I = PRT = 40000 x $\frac{10}{100}$ x $\frac{9}{12}$ = shs 3000

23. Mary bought 8 dresses at Shs 72,000/=. How much did each dress cost?

Cost per dress = $\frac{Total\ cost}{number\ od\ dresses}$ = $\frac{72{,}000}{8}$ = $shs.9000$

24. A cyclist covers a distance of 21km in 45 minutes. How long will it take him to cover 84km?

21km require 45 minute

84km will require $\frac{45\ x\ 84}{21}$ = 180 $minute$ = $\frac{180}{60}$ = $3hours$

25. Musa went to sleep at 19 30 hours and did not wake up until 08:30 hours the following day. How long did he take sleeping?

He took = 2400 -1930 + 0830

= 4:30 +8:30

= 13hours

26. Simplify (3x + 5) - (x + I).

Remove brackets

3x + 5 –x – 1

Collect like terms

2x + 4

27. Mugisha scored 35 out of a total of 175 marks. Express his score as a percentage.

Percentage = $\frac{35}{175}\ x\ 100 = 20\%$

28. What is the Greatest Common Factor (GCF) of 8 and 12?

2	8	12
2	4	6
	2	3

GCF = 2 x 2 = 4

29. The average age of 3 girls is 11 years. If one of the girls is 12 years old, find the average age of the other two girls.

Total age of three girls = 3 x 11 = 33year

Total age of two girls = 33 – 12 = 21 years

Average age of two girl = $\frac{21}{2} = 10.5\ years$

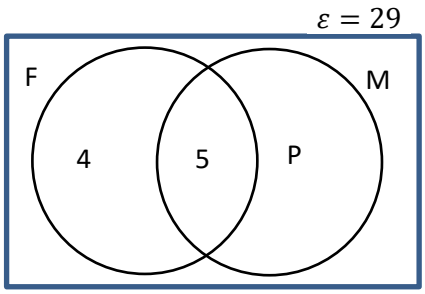
30. Give the solution set of the inequality: 1<X<7

X = {2, 3, 4, 5, 6}

SECTION B

31. In a class of 29 pupils, 9 eat fish (F), 5 eat both meat and fish, and P eat meat (M) only.

a) Represent this information on a Venn diagram.



b) Use the diagram to find the value of P

4+ 5+ P = 29

= 20

c) Find the total number of pupils who eat meat.

n(M) = 20 + 5 = 25

(a) Kamoga Devis can run t metres in 45 seconds.

(a) Express his speed in kilometres per hour.

t m = $\frac{t}{1000} km$

45 seconds = $\frac{45}{3600}\ hour$

Speed = $distance \div time$

= $\frac{t}{1000} \div \frac{45}{3600} = \frac{t}{1000}\ x\ \frac{3600}{45} = 0.08t\ km/h$

(b) What is his speed in kilometres per hour when t = 400 metres?

Speed = 0.08 x 400 = 32km/h

32. Logose had Shs 30,500 and she went to the market and bought the items shown in the table below.

a) Complete the table.

Item	Price	Total cost
3kg of meat	Shs.2,2000 per kg	Shs 6,600
2 loaf of bread	Shs. 1,500 per loaf	**Shs 3000**
2 litres of bread	Shs. **1200** per litre	Shs. 2,400
3 bars of soap	Shs.**750** Per bar	Shs. 2,250
1 bag of charcoal	Shs. 8500 Per bag	Shs. 8,500
Transport home	Shs. 30000	Shs. 3,000
Total expenditure		25750/=

b) How much money was she left with?

By subtraction

Balance = 30,500 -25750 = shs. 4750

33. Okello divided his money among his daughters: Anne, Barbra and Christine in the ratio 4:5:6 respectively. If Anne got Shs 600,000 find the amount of money that Okello had at the beginning.

Total ratio = 4 + 5 +6

= 15

Let the money be x

$\Rightarrow \frac{4}{15}x = 600000$

$x = \frac{600000\ x\ 15}{4}$

$= shs.2{,}250{,}000$

34. A P7 class was given a Mathematics test that was marked out of 20. The table below shows

the marks scored in the test,

(a). Complete the table.

Mark scored	Number of pupils	Total marks
3	4	12
11.25	4	45
6	**14**	84
8	8	**64**
15	8	75

b). What was the modal mark?

Modal mark is the most common = 6 (scored by 14 pupils)

c). Find the number of pupils in this class.

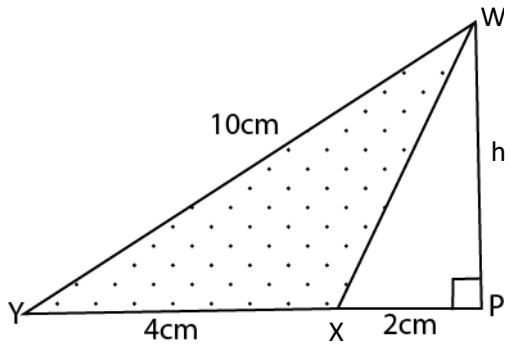
Total number of pupils = 4 + 4+ 14 + 8 + 8 = 38

d). Work out the average mark scored.

Total mark scores = 12 +45 + 84 + 64 +75 = 280

Average mark = $\frac{280}{38} = 7.4$

36. In the figure below, find the area of the shaded triangle



Using Pythagoras theorem

$h^2 + (4+2)^2 = 10^2$

$h^2 + 36 = 100$

$h^2 = 100 - 36 = 64$

$h = \sqrt{64} = 8$

Area of shaded part = area of triangle YWP – area of the triangle WXP

Spoı

$= \frac{1}{2}$ X(4+2) x 8 - $\frac{1}{2}$ x 2 x 8

= 24 – 8 = 16

37. A driver covered a distance of 120km in $1^{1}/_{2}$ hours.

(a) What was his average speed?

Speed = distance ÷ time

= 120 ÷ 1 ½ (km/hr)

= $120 \div \frac{3}{2}$

= $120 \times \frac{2}{3}$ =80km/hr

(b) What distance would he cover if he travelled for 2 ¾ hours?

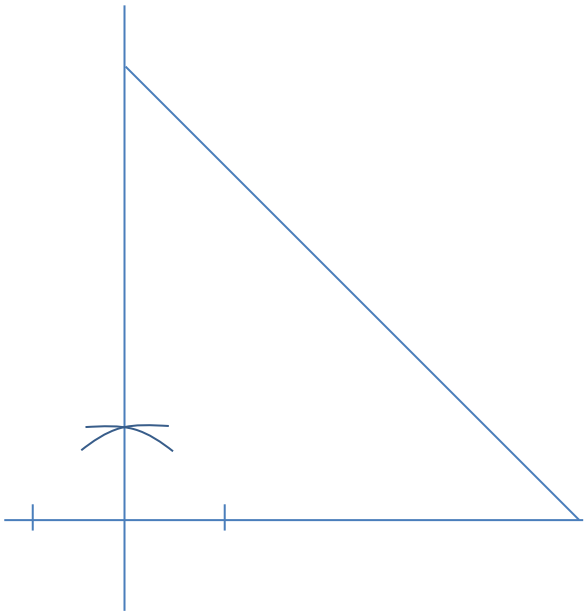
Distance = speed x time

= 80 x 2 ¾

= $80 \times \frac{11}{4}$ = 220km

38. (a) Using a ruler and a pair of compass only, construct a triangle XYZ such that:

XY = YZ = 6 cm and angle XYZ = 90°.



(b)Measure the length of XZ.= 8.5cm

39. A tank is 2/3 full of water. When 600 litres of water are added, the tank is 5/6 full. How many litres of water does it contain when it is 3/4 full?

Let the capacity of the tank be x

$\frac{2}{3}\ of\ x + 600 = \frac{5}{6}x$

$\frac{2}{3}\ x + 600 = \frac{5}{6}x$

Collect like terms

$\frac{5}{6}x$ - $\frac{2}{3}\ x$ = 600

$\frac{(5-4)x}{6} = 600$

$\frac{x}{6} = 600$

X = 3600

The number of litres is $\frac{3}{4}\ full\ tank = \frac{3}{4}\ x\ 3600$

= 1800litres

40. Namusoke's mother bought 8 books at Shs. *(x*- 150) each and 2 mathematical sets at (x + 100) each. She spent Sh 5,300 altogether. Find the amount of money spent on books.

Total cost = 8(x – 150) + 2(x+100) = 5300

Remove brackets

8x – (8 x 150) + 2x + (2 x 100) = 5300

8x -1200 + 2x + 200 = 5300

Collect like terms

8x +2x-1200+200 =5300

10x -1000 = 5300

Collect like terms

10x = 6300

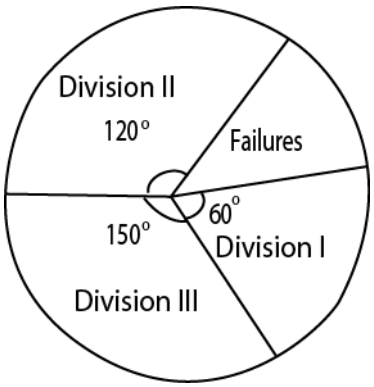
x = 630

money spent of book = 8(630 -150)

= 480 x 8

Shs. = 3840/=

41.The pie-chart below shows the performance of 60 candidates of Pole-pole P/S in PLE Mock examinations. Use the information to answer the questions that follow:



(a) How many candidates passed in division I?

Angle sum of a circle = 360^0

Number of candidates that passed in division I = $\frac{60}{360}\ x\ 60 = 10\ candidates$

(b) How many candidates passed in division II?

Angle sum of a circle = 360^0

Number of candidates that passed in division I = $\frac{120}{360}\ x\ 60 = 20\ candidates$

(c) How many candidates failed?

Angle sum of a circle = 360^0

Let the degree for failure x

x +120 +150 + 60 = 360

x = 30^0

Candidates that failed = $\frac{30}{360} x\ 60 =\ 5$

(d) Of those who passed, what fraction passed in division III?

Angle sum of a circle = 360^0

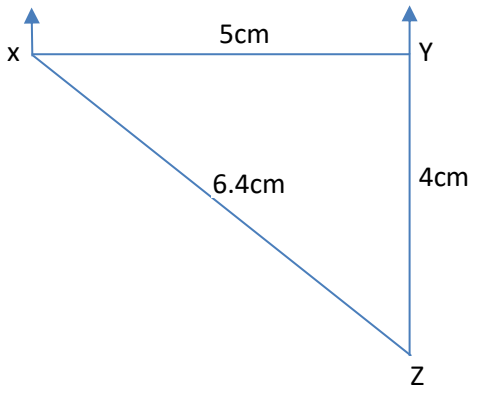
Number of candidates that passed in division III = $\frac{150}{360}\ x\ 60 = 25\ candidates$

Total student passed = 60 -5 = 55

Fraction = $\frac{25}{55} = \frac{5}{11}$

42. Byarugaba left village X and drove westwards to village Y, a distance of 30km. He then drove southwards from village Y to village Z, a distance of 24km and returned directly from Z to X.

(a) Using a scale of 1 cm to represent 6km, draw an accurate diagram to show Byarugaba's journey.



(b) Find the shortest distance from X to Z in Kilometres(km)

The shortest distance = 6.4 x 6 =38.4km