KAMPALA CITY EXAMINATIONS BOARD

" The city of success "

2024

MATHEMATICS

Time allowed: 2 hours 30 minutes

EMIS No.						Personal No.		

CITY EXAMS

Candidate's Name: ……

Candidate's Signature: ……..

District ID No.

Read the following instructions carefully

1. Do not forget to write your **school** or **district name** on the paper.
2. This paper has two sections: **A** and **B**. Section **A** has **20** questions and section **B** has **12** questions. The paper has **14** printed pages altogether.

CITY EXAMS

3. Answer **all** questions. **All** working for both sections **A** and **B** must be shown in the spaces provided.
4. **All** answers **must** be written using a **blue**or **black** ball point pen or ink. Any work written in pencil other than graphs or **diagrams** will **not** be marked.
5. **No calculators** are allowed in the examination room.
6. Unnecessary changes in your work and handwriting that cannot be read easily may lead to **loss of marks**
7. Do not fill anything in the table indicated: **FOR EXAMINERS USE ONLY"** and boxes inside the question paper.

FOR EXAMINERS' USE ONLY		
Qn. No.	**MARKS**	**EXR'SNO.**
1 – 5		
6 – 10		
11 –15		
16 – 20		
21 – 22		
23 – 24		
25 – 26		
27 – 28		
29 – 30		
31 - 32		
TOTAL		

SECTION: A (40 MARKS)

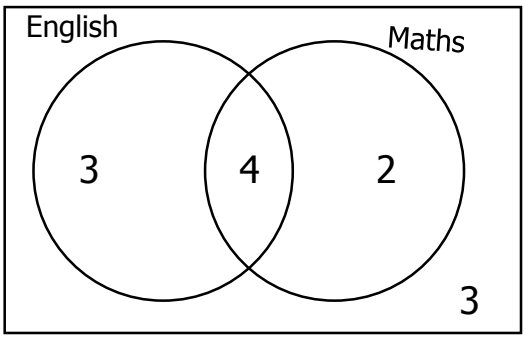
ANSWER ALL QUESTIONS IN THIS SECTION

1. Divide; 12÷4.

2. Write; **Nine hundred forty nine** in figures.

3. Find the median of $^{-}5$, $^{-}4$, 4 and $^{-}1$.

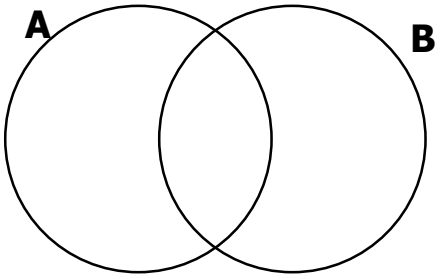
4. In the figure below, find the probability of picking pupils at random who like only one subject.



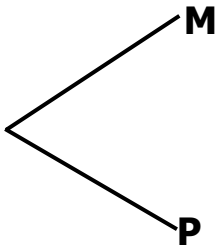
5. Change 3½ into improper fraction.

6. The diameter of a cylinder is 14cm. work out it's radius.

7. In the Venn diagram below, shade **AUB**



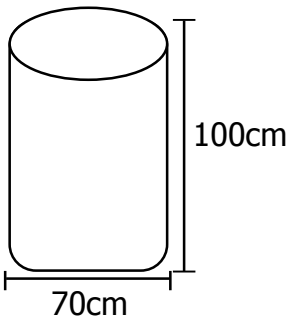
8. Bisect the figure below.



9. 4 men can dig a land in 12days. How many men can do the same work in 3days?

10. Express **5m/sec** in km/hr.

11. Find the capacity of the figure below.



12. During an occasion, some scouts were standing in a straight line. Deserter Patrick was 12^{th} from the right hand side and 6^{th} from the left hand side. How many scouts were in the line?

13. Show that 21021 is divisible by 11.

14. Given that P=2, and M= $^{-}3$

Evaluate $\frac{3p+m}{m}$.

15. Increase sh. 36,000 in the ratio of 2:4.

16. Simplify: $b^3 \div bxb^2$.

17. Find the LCM of 63 and 42.

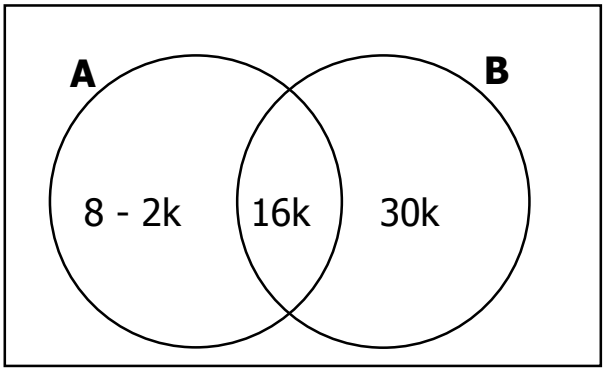
18. Workout $123_{five} \times 32_{five}$.

19. Simplify $^{+}4 - {}^{+}6$.

20. Find the place value of 4 in the number 34001.

SECTION (B) 60 MARKS

21. The Venn diagram below represents the portion of land given to group A and group B in acres. Study it and use it to answer the questions that follow.



a. If n(A-B)= n(B-A), find the value of k. **(2marks)**

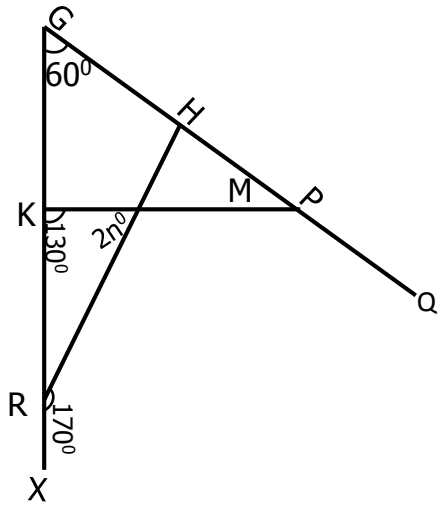
b. How many acres did they share equally? (1mark)

c. How many acres did group A get? (2marks)

22. a.The weight of a cow is 30kg less than that of a camel. A sheep weigh a third of a cow. If the total weight of the three animals is 205, What is the weight of the camel? (3marks)

d. If 2kg of mutton cost sh.31,000, what is the total cost of the sheep? (3marks)

23. In the figure below, find the size of angle marked M and N.



i. N (2marks)

ii. M (2marks)

b. The two interior angles of a triangle are $(2x-20)^0$ and $(3x-15)^0$. If the opposite exterior angle is $(2x+40)^0$, find the value of x. **(2marks)**

24. The figure below is a rectangular sheet of a metal. A welder curved it to form a cylindrical tank whose height is 100cm.

a. Calculate the capacity of the cylindrical tank formed (Take $\pi = 3\frac{1}{7}$) (6marks).

25. a. Simplify $\frac{0.09+0.15}{0.6-0.2}$ (2marks).

b. Expand 432.56 using indices. (2marks).

26. a. A rectangular block has an area of 72square centimeters and its width is 8cm, if a square block has a perimeter which is four times the length of the square block. If the square blocks were packed into a cube measuring 72m, how many square blocks were packed into the cube? **(3mks)**

27. Using a ruler, a pencil, and a pair of compasses only, construct a quadrilateral ABCD where line $\overline{AB}$= 7cm, <ABC = BAD=75^0 and BC = 5cm. (5marks)

28. In a P.7 class, $\frac{1}{5}$ of the girls are boarders, and $\frac{1}{3}$ of the boys is $\frac{1}{5}$ less than the fraction of girls. Calculate the number of girls who are day scholars in the class if the class has 24 boys in boarding section. **(5mks)**

29. The table below show how a taxi driver travelled from Kampala to Mbale.

Stations	**Arrival time**	**Departure**
Kampala		8:40am
Jinja	10:10am	10:35am
Iganga	11:15am	11:25am
Nautumba	12:25pm	12:25am
Mbale	2:00pm	

a. How many hours did the driver spent to travel from Kampala to Jinja? (1mark)

b. How long did the **driver** stay at Iganga? (1mark)

c. Find the total resting time for the driver from Kampala to Mbale. (1mark)

d. If Mbale is 384km away from Kampala, find the average speed of the taxi driver for the whole journey. (3marks).

30. The ratio of Melissa's age to Elissa's age is 3:2. In 5years time, their total age will be 40years. **(2mks each)**

a. How old is Elissa now?

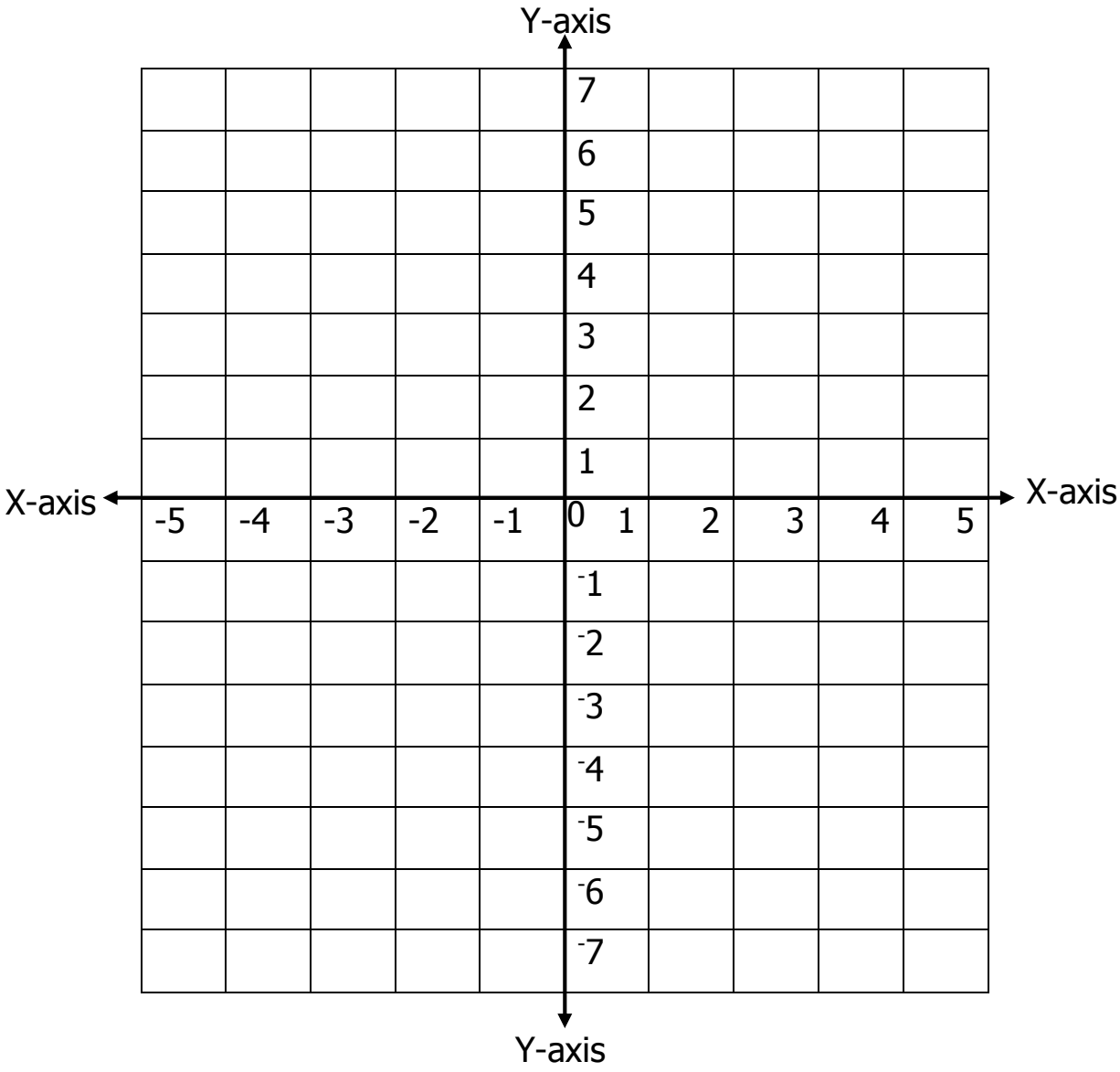
b. How old will Melissa be then?

c. After how many years will Melissa be 35years old?

31. a. Group 26 in base five (2marks)

b.If $104_k = 45_{six}$, Find the value of k. (3marks)

32. a. Given that co-ordinate graph below, plot the following pans of points A($^{-}3$, $^{+}3$), B($^{+}1$, $^{+}3$), ($^{+}3$, $^{-}2$) and D ($^{-}3$, $^{-}2$)



c. Join points A to B, B to C, C to D and D to A and name the polygon formed. (3marks)

d. Calculate the area of the polygon formed. (2marks)