



KAMPALA CITY EXAMINATIONS BOARD

"The city of success"

2024

MATHEMATICS UNIVERSAL SET TWO

Time allowed: 2 hours 30 minutes

EMIS No.						Personal No.		

Candidate's Name:

Candidate's Signature:

District ID No.

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CITY
EXAMS

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 **17** printed pages altogether.
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 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 43		
44 – 46		
47 – 49		
50 – 52		
53 – 55		
TOTAL		

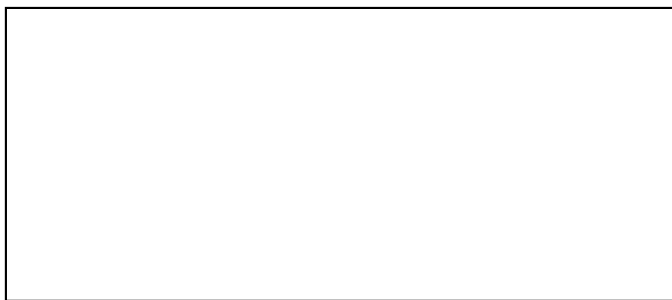
SECTION A (60MARKS)

1. Multiply 4×3 .

2. Write in words; 1888.

3. Simplify; $7-k = 13k$.

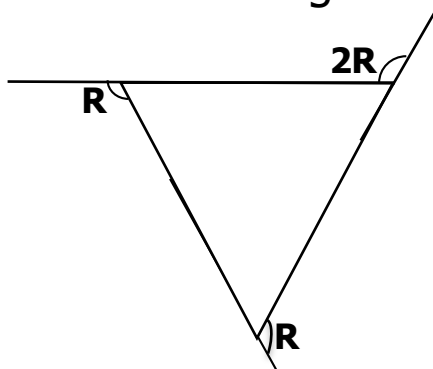
4. Show all the lines of folding symmetry for the rectangle below.



5. Round off 65.34 to the nearest whole number.



6. Find the value of R in degrees.



7. Workout the mean of $3p$, 0 , 4 , $2p$, p , 8 .

8. Workout $3\frac{1}{2} + \frac{1}{4}$.

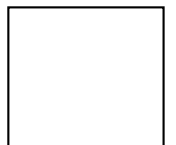
9. Find the number whose standard form give 1.49×10^{-2} .

10. Expand 34.125 using place values.



11. If 3 books costs sh.9000, how many similar books will Ratib buy for sh.27, 000?

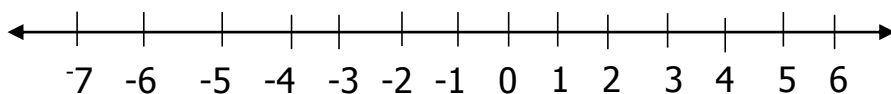
12. Prime factorise 128 as a product of its prime factors.
13. Workout $2^{-6} \pmod{7}$.
14. Given that set $m = \{x, y, z\}$. List all the possible subsets in set m .
15. Convert 134_{five} to base three.



16. Workout: $(0.25 \times 30) + (50 \times 0.25)$.

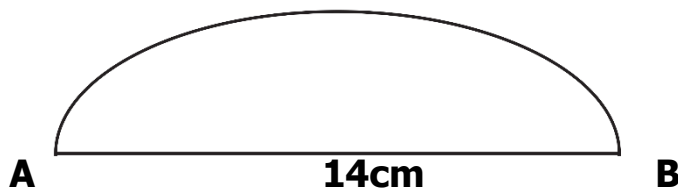
17. Express $0.2727\ldots$ as a common fraction.

18. Workout 2×3 using the number line below.



19. Dr. Ntambis' Salary was increased from sh. 300,000 to sh.360,000 per month. If $\frac{3}{5}$ of Dr. Ntambis' current salary is equal to $\frac{3}{4}$ of Bruno's salary. How much money does Bruno earn per month?

20. Find the perimeter of the figure below.

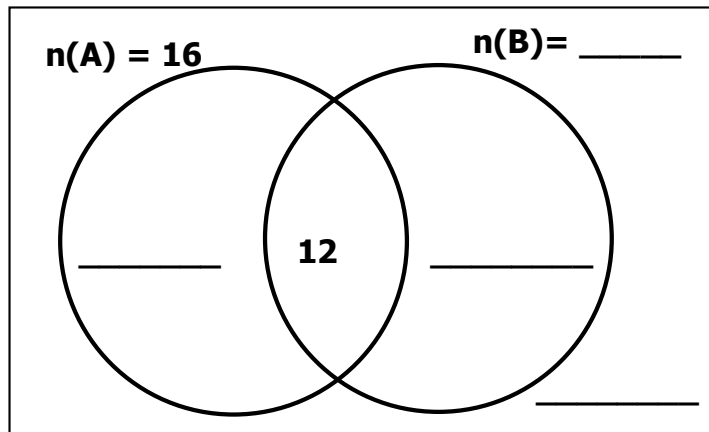


SECTION B 60 MARKS

21. The Venn diagram below shows the number of people who like letter **A** and **B**.

- a. Given that $n(\mathbf{A} \cup \mathbf{B})' = 18$, The probability of picking people at random who like only one letter is $\frac{10}{40}$, Complete the Venn diagram below.

(5marks)



22. Complete the table below.

Given that $x = 2y + 1$.

X	3	5	7
Y	-1	$\frac{1}{2}$

(5marks)



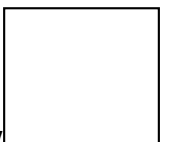
23. Mr.Mupaya Isaac went to the bank and withdrawn 300 bank notes each worth sh.5,000.

- a) If the serial number for the first bank note is AB6534299. How much money did he withdraw from his bank account?
(5marks)



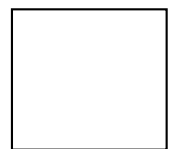
24. In a school, $33\frac{1}{3}\%$ of the population like mathematics, $\frac{1}{8}$ like science, $12\frac{1}{2}\%$ like social studies while the rest like English.

Draw an accurate pie-chart to represent the above information.
(5Marks)



25. The area of rectangular metallic door is 1176cm^2 and the length is 42cm . A welder cut quadrants of radius 7cm from the rectangular metallic door.
- a. How many quadrants did the welder get from the rectangular metallic door? **(3marks)**

- b. If the welder joined all the quadrants that were cut from the rectangular metallic door to form circles, workout the area of the circles. **(3marks)**



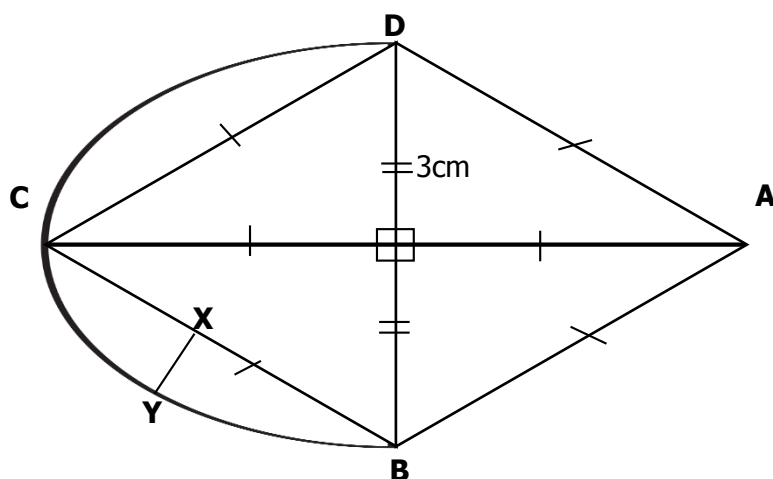
26. Town **A** is 50km southwest of town **B**. Town **C** is 60km away from town **B** on a bearing of **135°** from **B**.

a. Use scale of **1cm: 10km**, Draw an accurate diagram showing the three towns. *(3marks)*



b. Find the bearing of town **A** from town **C**. *(2marks)*

27. Below is a rhombus enclosed with two semi circles. Use it to answer the questions that follow.



a. Given that the area of the rhombus is 24cm^2 , find the length AC. **(3marks)**



b. Workout the length XY. **(3marks)**

28. Given the numbers 653.42.

a. State the place value of 6.

(1mark)

b. Workout the quotient of the value of 5 and the place value of 2.

(2marks)

c. Workout the product of the value of 6 and the value of 4.

(2marks)

29. The exterior and interior angle of a regular polygon is in the ratio of 2:3 respectively,

a. Find the size of its exterior angle.

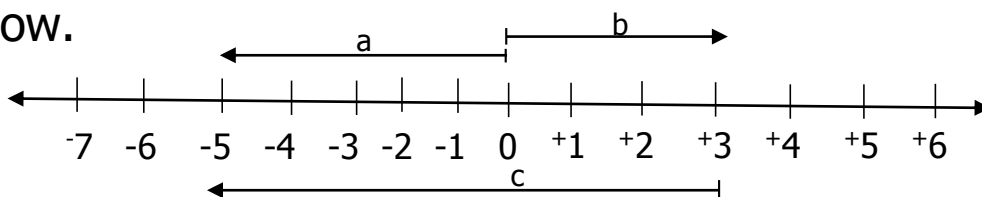
(2marks)



b. How many sides has the polygon?

(2marks)

30. Study the number line below and answer the questions that follow.



a. write the integers represented by

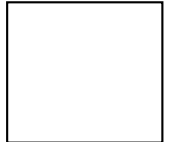
i. a

(1mark) each.

ii. b

iii. c

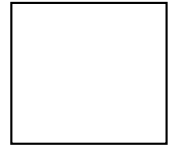
b. Write the mathematical statement to show the number line above. *(2marks)*



31. **Mr. Karim** left home at 11:20am driving at a steady speed of 75km/hr and reached town at 12:50pm.

a. Calculate the time taken by **Mr. Karim** to reach town. *(3marks)*

b. How far is his home from the town? *(2marks)*



32. A Link bus left town **A** for town **B** with 25 passengers. At **B**, 8 passengers came out but 22 new passengers boarded the bus for town **C**. At **C**, 13 more passengers boarded the bus but unknown number of passengers came out of the bus. If the bus reached town **D** with 33 passengers,

a. How many passengers came out of the bus at town **C**?

(3marks)

b. If the passengers who boarded the bus at town **B** paid a total amount of **shs.209, 000**, how much money did each passenger pay at town **B**? *(3marks)*

