THE REAL SCHOOLS
E DIRECTOR'S SPECIAL EXAMINATIONS
2023

MATHEMATICS

Time allowed 2 hours 30 minutes

INDEX NO:	Random No.						Personal No.		

ate's Name: .....

ate's Signature: .....

Random No. .....

ID: .....

THE FOLLOWING INSTRUCTIONS CAREFULLY

write your **school** or **district name** re on this paper.

per has **two** sections: **A** and **B** Section A has tions and section **B** has **12** questions.

all questions. All the working for both **A** and **B** must be shown in the spaces t.

ing **must** be done using a **blue** or **black** pen or ink. Any work done in pencil graphs and diagrams will **not** be marked.

tors are allowed in the examination room.

ry **changes** in your work and g that cannot easily be read may lead **arks**.

nything in the table indicated "**For use only**", and those boxes inside paper.

FOR EXAMINERS' USE ONLY		
QUESTION NUMBER	**MARKS ATTAINED**	**INITIALS**
1 – 10		
11 – 20		
21 – 30		
31 – 40		
41 – 43		
44 – 46		
47 – 49		
50 – 52		
53 – 55		
TOTAL		

'S COMMENT:

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SECTION A (40 mks)

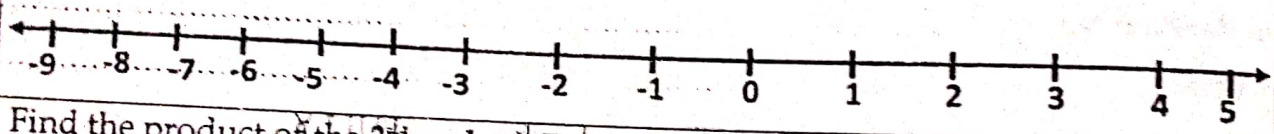
1. Workout: 163 – 47

2. Write in figures ninety tthousand eleven.

3. Simplify: $14p - 3(2p - 5)$

4. Given that set M= {3, 5, 4, 2, 0}. Find the number of subsets in set M.

5. Work out: $^{-}8 - {}^{-}3$ using the number line below.



6. Find the product of the 3rd and 7th rectangular numbers.

7. Work out: $\frac{18}{25} \div \frac{3}{5}$

8. A mathematics lesson started at 12: 15pm and lasted for $1\frac{2}{3}$ hrs. At what time did the lesson end in 12 hour clock system.

9. Show and count all the lines of folding symmetry in the figure below.

10. A trader sold a dress at sh 40500 making a profit of sh 3500. What was the cost price of the dress?

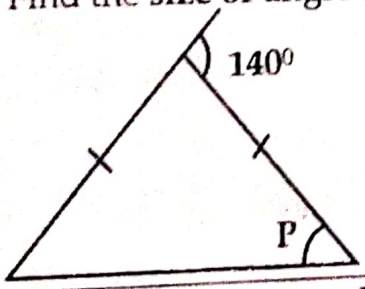
11. A box contains **9 red** marbels, **12** blue marbles, **13** green marbles and **6** white marbles. What is the probability of taking out a red marbel from the box?

12. How many packets of **350grams** can be got from a **5.25 kg** packet of sugar?

13. Given that **a = 9** and **b= 4**. Find the value of $\sqrt{ab} + 45$

14. **Work out:** $213_{four} + 132_{four}$

15. Find the **size of angle P** in figure below.

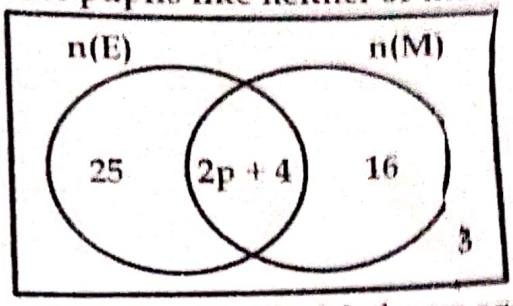


16. Find the **highest number** of people who can share **45** or **36** sweets leaving no remainder.

17.	Find the **mean** of the **first five prime numbers**.	18.	On a shelf, books with green cover and that with brown cover are in the ratio of **2:3**. If there are **18 books** with green cover. Find the **total number** of books on the sheif.
19.	The bearing of town **A** from town **B** is 345^0. What is the **bearing** of town **B** from town **A**.		
20.	At the factory, sweets were packed into boxes which hold **108 sweets** each. How many boxes of the same size are needed to pack **1188 sweets?**		

SECTION II (60 mks)

21. The Venn diagram below shows the number of pupils who like English and Mathematics. Some pupils like neither of the two subjects.



a) If the number of pupils who like Maths are equal to those who do not like Maths. Find the **value of P**. (3 mks)

b) How **many pupils** like both subjects. (2 mks)

22. What number has been expanded below. (2 mks)

$(3 \times 10^3) + (4 \times 10^1) + (5 \times 10^0) + (6 \times 10^{-3})$

b) **Work out:** $(4.7 \times 26) + (4.7 \times 24)$ (2 mks)

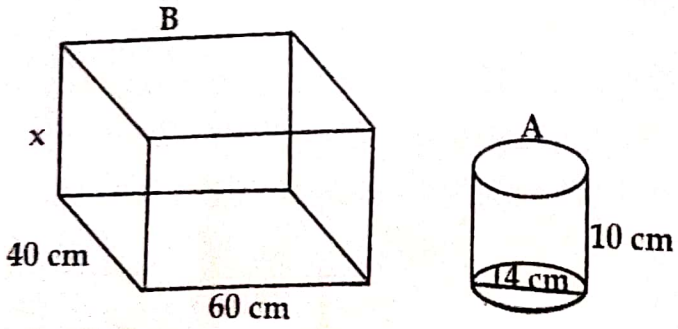
23. The table below shows the rate at which different currencies were sold and bought in a commercial bank during the month of August. Use it to answer questions that follow.

Currency	Buying in Ugsh	Selling in Ugsh
1 US dollar ($)	3600	3650
1 Euro (€)	4000	4050
1 Ksh	28	30

a) How many **Euros** did Elijah get for **Ugsh**? 1721250 **(2 mks)**

b) Ruto come from Kenya with **sh 153300** and exchanged them for US dollars. How many **US dollars** did he get from the bank? **(3 mks)**

24 **Study the figures below and answer questions that follow.**



a) If **5 layers** of tin **A** were packed in container **B**. Find the **value of X**. **(2 mks)**

b) Find the number of tins of **A** which can be packed in the first layer of container **B**.

(2 mks)

c) Find the **capacity** of container **B**.

(2 mks)

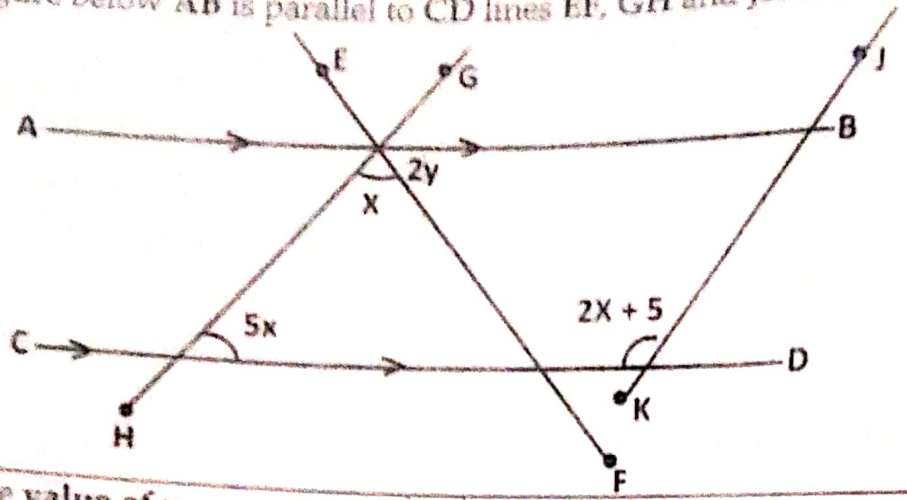
25. The average mass of **5** people is **72kg**. If three more people join the group, the average mass becomes **65 kg**. Find the **average mass** of the **3** people who joined the group.

(4 mks)

b) Find the **range** of $-1, 0, 5, 6, 7, -9$

(1 mk)

26. In the figure below AB is parallel to CD lines EF, GH and JK are transvased lines.



a) Find the value of x. (2 mks)

b) Find the value of y. (2 mks)

27. The table below shows how a taxi driver travvelled from town A through town B and C to town D. Study and use it to answer questions that follow.

Town	Arrival	Departure
A		11 40hrs
B	12 10hrs	12 20hrs
C	13 00hrs	13 15hrs
D	16 40hrs	

a) How long did the taxi driver stay at town C? (2 mks)

b) Find the **time** the taxi driver took to travel from town **A** to town **D**. **(2 mks)**

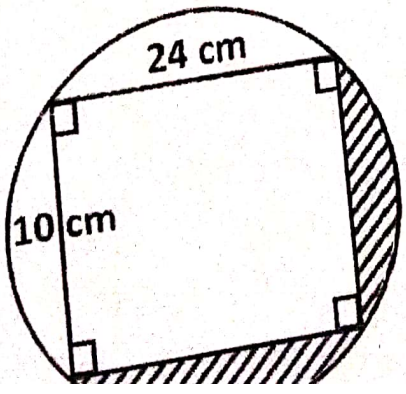
c) If the distance from town **A** to town **D** is **270km**. Calculate the **average speed** of the taxi driver for the whole journey. **(2 mks)**

Juma sold his television set to Amina at **sh 350, 000** making a loss of **20%**. Amina later sold the television to shadia at a profit of **15%**.

a) Calculate the **amount of money** Juma paid for the television. **(2 mks)**

b) For how **much money** did Shadia buy the television. **(2 mks)**

29. **Study the figure below and use it to answer questions that follow.**



a) Find the **area** of the shaded part. ($\pi = 3.14$) **(6 mks)**

30. **2400 people** attended a concert. The ratio of men to women was **5:14** and the ratio of children to women was **3:7**

a) Find the **ratio** of **men** to **women** to **children** in the concert.

(2 mks)

b) How **many more women** than **children** attended the concert?

(3 mks)

31. A father is **24 years** older than his son. In **8 years** time, he will be twice as old as his son. How **old** was each of them **5 years ago?**

(4 mks)

The bearing of town **Q** from town **P** is **O80^0**. The distance between town **P** and town **Q** is **84km**. The bearing of town **R** from town **Q** is **155^0**. The distance between town **Q** and town **R** is **108km**.

a) Draw **a sketch diagram** to show the positions of the three towns.

(1 mk)

b) Using a scale of **1km** to represent **12km**, draw an accurate diagram to show postions of the three towns.

(4 mks

c) Find the bearing of **town R** from **town P**.

(1 n