THE JEROX END OF YEAR EXAMINATION 2023

SECTION A (40 Marks)

1 **Workout:** 23 x 3

23 / 3×3=9
x 3 / 3×2=6
69

∴ 23×3=69 B2

2 Write **7,054** in words.

THOUSANDS			UNITS		
H	T	O	H	T	O
		7	0	5	4

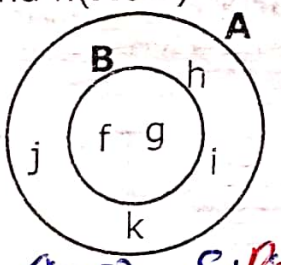
Seven thousand fifty four. B2

3 Without dividing, show that **111** is divisible by **3**.

111
↓
1+1+1
3

Since 3 is divisible by 3, 111 is divisible by 3 also. B2

4 **Use the Venn diagram below to find n(A∪B).**



(A∪B) = {h, j, k, f, g}. B2

n(A∪B) = 6

5 **Workout:** 3 + 4 = ____ **(mod5)**

3+4 = — (mod5)
3+4 = 7÷5 (mod5)
3+4 = 1r2 (mod5)
3+4 = 2 (mod5) B2

6 Using a ruler, a pencil and a pair of compasses only, construct an angle of **90°**.

B2

7 Given that **M =n** and **n = 4 , k = 5.**
Find the value of **2mk +n.**

value of 2mk+n

2mk+n
2×m×k+n
2×4×5+4
8×5+4
40+4 B2
44

8 Change **6790** grams to kilograms.

1000g → 1kg
6790g → (1/1000g × 6790g)
→ (6790/1000) kg B2
6790g → 6·79kg.

9 If a dice is tossed once, find the probability that a square number shows up.

Probability = $\frac{n(E)}{SS}$

$= \frac{1,4}{1,2,3,4,5,6}$

Probability $= \frac{2}{6}$

10 **Workout:**

$\begin{array}{r} {}^{1}3 \quad 4_{five} \\ +\ 2 \quad 0_{five} \\ \hline 10_{five} \end{array}$

3+2=5

5÷5=1r0

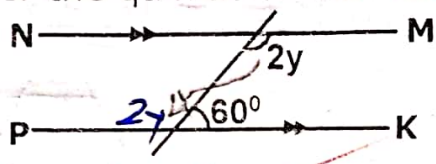
11 **Add:**

Hours	Min
4	35
+ 3	45
8	20

35+45 = 80

80 − 60 = 20

12 In the diagram drawn below, line **NM** is parallel to **PK**. Use it to answer the questions that follow.



Find the value of y

$2y + 60° = 180°$

$2y + 60° - 60° = 180° - 60°$

$2y = 120°$

$\frac{2y}{2} = \frac{120°}{2}$

$y = 60°$

13 Arrange $^{-}3$, $^{+}1$, $^{-}2$, 0 and $^{+}4$ in descending order.

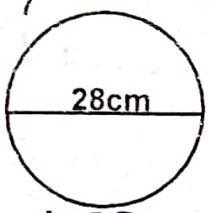
$^{-}3, ^{+}1, ^{-}2, 0, ^{+}4$

$^{-}4, ^{-}3, ^{-}2, ^{-}1, 0, 1, 2, 3, 4, 5$

descending order

$^{+}4, ^{+}1, 0, ^{-}2, ^{-}3$.

14 Find the circumference of the circle drawn in the figure below. (Take $\pi = \frac{22}{7}$)



$C = \pi D$

$= \frac{22}{7} \times 28cm$

$= \frac{1}{7}(22 \times 4)cm$

$C = 88cm$.

22
× 4
88 cm

15 Determine the average of **4, 8, 4,** and **0**.

Average = $\frac{\text{Sum of data}}{\text{No of data}}$

$= \frac{4+4+8+0}{4}$

$= \frac{16}{4}$

Average = 4

16 **Workout:** $\frac{3}{4} \times \frac{2}{9}$

$\frac{3}{4} \times \frac{2}{9}$

$\frac{3 \times 2}{4 \times 9}$

$\frac{6}{36} = \frac{1}{6}$

17 A motorcycle moved at an average speed of **120km/h** from town **Z** to town **Q** taking **$1\frac{1}{2}$ hours**. Calculate the distance between the two towns.

Distance = Speed X Time

= 120 km/h X $1\frac{1}{2}$ h.

= 60 km/h X $\frac{3}{2}$ h

= 60km X 3/2

Distance = 180km.

D
S T

18 In a class, **40%** of the pupils are boys and the rest are girls. If the class has **90** girls, how many pupils are in the class?

%age for girls.

Let the %age for girls be W.

W + 40% = 100%

W + 40% − 40% = 100% − 40%

W = 60%.

No. of pupils in class

90 ÷ 60 × 100

30 × 5

150 pupils.

19 Peter had a bundle of notes numbered from **KH 456359** to **KH 456378** of five thousand shillings. How much was she having?

Last note − First note.

KH 456378

− KH 456359

19 + 1

Sh. (19 + 1 X 5000)

Sh. (20 X 5000)

Sh. 100,000

20 Write **59kg** in Roman numerals.

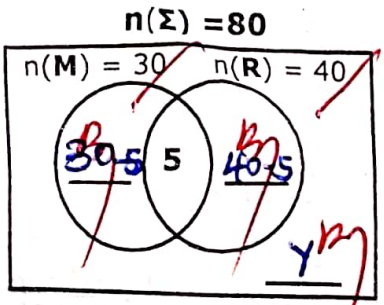
50 + 9 = 59kg

L IX = LIX kg.

SECTION B (60 MARKS)

21 In a class of **80** pupils, **30** pupils ate matoke (**M**), **40** pupils ate rice (**R**), **5** pupils ate both matoke and rice while **y** did not eat any of the two types of foods.

a) **Use the information above to complete the Venn diagram.**



(03 marks)

70 15 65

b) Find the value of **y**.

$30-5y+40-5y=80$

$30+40-5y=80$

$70-5y=80$

$65+y=80$

$65-65+y=80-65$

$y=15$ pupils. *(02 marks)*

c) How many pupils ate only one type of food?

$(n(M)\text{ only})+(n(R)\text{ only})$

$(30-5)+(40-5)$

$25+35$

60 pupils. *(01 mark)*

22 a) Use the number **4687** to find the difference between the value of **6** and the value of **8** in the number.

Difference

$500-80=420$

$(8\times10)=80$

$(6\times100)=600$ *(03 marks)*

b) Expand **4687** using exponents.

$(4\times10^3)+(6\times10^2)+(8\times10^1)+(7\times10^0)$ *(02 marks)*

23 a) What is the value of 4 in 243_{five}?

The value of 4 is 20

$(4\times5)=20$ *(01 mark)*

b) **Workout:**

$4\ 2\ 3_{five}$

$-\ 1\ 0\ 4_{five}$

$3\ 1\ 4_{five}$ *(02 marks)*

c) Change 304_{five} to base ten.

$(3\times5^2)+(0\times5^1)+(4\times5^0)$

$(3\times5\times5)+(0\times5)+(4\times1)$

$(3\times25)+0+4$

$75+0+4$

79_{ten}. *(02 marks)*

24 a) The sum of the three consecutive even numbers is **72**. Find the numbers. Let k be the first no.

1st no.	2nd no.	3rd no.	Total
k	k+2	k+4	72

$k+k+2+k+4=72$

$3k+6=72$

$3k+6-6=72-6$

$3k=66$

$k=22$

1st no.	2nd no.	3rd no.	Total
22	24	26	72

(03 marks)

b) Find the square of the second number.

Square of the second no. $24^2=24\times24$.

(24×24)

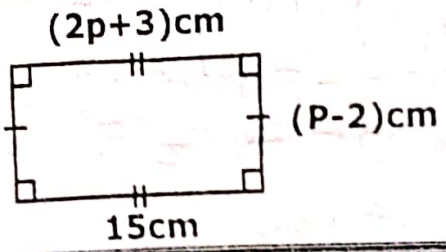
24×24

96

48

576 *(02 marks)*

25 Study the rectangle below and use it to answer the questions that follow.



a) Find the value of **p**.

$2p+3 = 15$ cm

$2p+3-3 = 15\text{cm} - 3$

$2p = 12$

$p = 6$cm

(02 marks)

b) Workout the area of the figure above.

P=6cm

Length of the figure	Width of the figure
(2p+3) cm	(P-2) cm
2×6+3	6cm−2cm
12+3	4cm
15cm.	

Area = L × W

= 15cm × 4cm

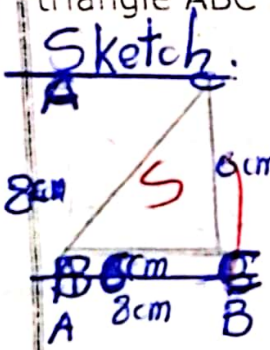
Area = 60 cm^2

Area = 60 cm^2

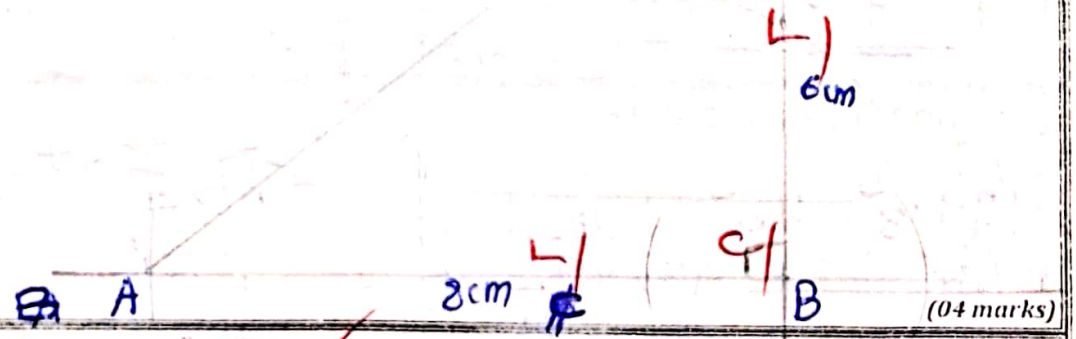
(04 marks)

26 a) Using a ruler, a pencil and a pair of compasses only, construct a triangle ABC such that **AB = 8cm**, **BC = 6cm** and **ABC = 90°**.

Sketch.



ACCURATE DIGRAM:



(04 marks)

b) Measure line AC.

line AC = 10cm

(01 mark)

27 a) Magezi is **3 times** as old as Grace. If their total age is **24** years. How old is magezi?

Let Grace's age be k.

Grace	Magezi	Total age
k	3k	24

Magezi's age: 3k

$k + 3k = 24$

$4k = 24$

$k = 6$ years.

3k

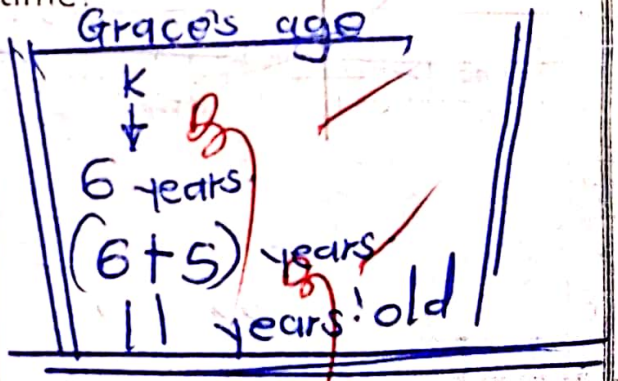
3×6

(3×6) years

18 years

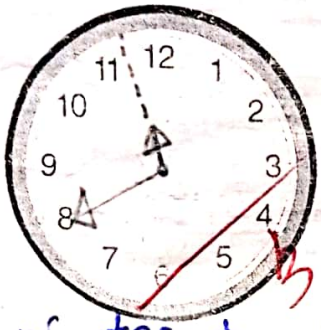
(02 marks)

b) How old will Grace be in **5years** time?



(02 marks)

28 a) On the clock face show **20** minutes to mid-day.



20 minutes to mid-day

(02 marks)

b) A motorist travelled at a speed of **140km/hour** in **120** minutes. How long was the journey?

Distance = Speed × Time

= 140km/h × 2h

Distance = 280 km

Given
D = ?
T = 120m
S = 140km/h
D = S × T

(02 marks)

29 a) Increase **Sh.600, 000** by **30%**.

%age increase:
100% + 30%
130%

130% of sh. 600,000
$\left(\frac{13}{\cancel{100}} \times \text{sh. } 600,\cancel{000}\right)$
sh. (13 × 6000)
sh. 780,000

13 × 6 = 78

(02 marks)

b) Kalule deposited **sh.600,000** in the village SACCO which offers an interest rate of **4%** per annum for **2** years. How much money did he get from the SACCO after **2** years?

S.I = P × R × T

= sh. 600,000 × 4/100 × 2

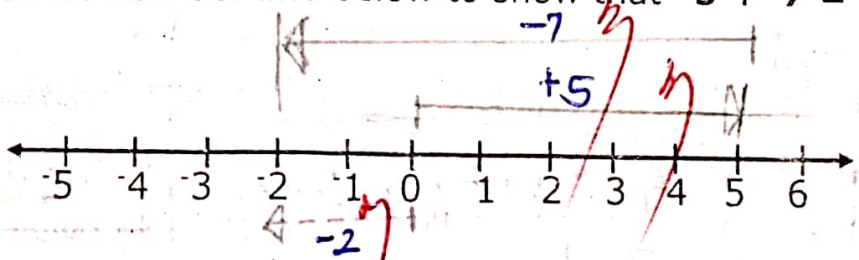
= sh. 6000 × 8

Simple interest = sh. 48,000

∴ He got sh. 48,000 from the village SACCO.

(03marks)

30 a) Use he number line below to show that $^{+}5 + {}^{-}7 = {}^{-}2$.



(03marks)

b) What is the additive inverse of $^{-}5$?

Let n be the additive inverse.

n + (−5) = 0

n − 5 = 0

n − 5 + 5 = 0 + 5

n = +5

The additive inverse of −5 is +5.

(02 marks)

31 Mukasa scored the following marks in End of term examination, **60, 43, 40, 57** and **60**. Use them to answer the questions that follow.

a) What was his modal score?

Marks	Freq
60	2
57	1
43	1
40	1

His modal score was 60 marks.

(02 marks)

b) Find his range.

Range = Highest mark − Lowest mark.
= (60 − 40) marks.
Range = 20 marks.

(01 mark)

c) Calculate the mean score.

Mean score = Sum of scores / No. of scores.
= 120 + 83 + 57 / 5
= 260 / 5
= 52
Mean score = 52 marks.

(02 marks)

32 a) Mr. Onyango went to the shop and bought the following items.

Items	Unit cost	Amount
3kg of maize flour	Sh 3,000	Sh. 9,000
2kg of beans	Sh 5,000	Sh 10,000
1½ kg of rice	Sh 5,000	Sh 7,500
	Total bill	Sh 26,500

Maize: sh. (3 × 3,000) = sh. 9,000

Beans: sh (10,000 / 2) = sh. 5,000

Rice: 3 kg (sh. 7,500 / sh. 5,000) = 1½ kg

Total Amount/bill: sh. 9,000 + sh. 10,000 + sh. 7,500 = sh. 26,500

(04 marks)

b) If he had Sh 30,000, what was his change?

Change = Amount that at first − Total bill
= sh. 30,000 − sh. 26,500
Change = sh. 3500

∴ His change was sh. 3500

(01 mark)