

WAKISO DISTRICT JOINT EXAMINATIONS BOARD
(WAKISO MAIN, KIRA, MAKINDYE AND NANSANA MUNICIPALITY)
PRIMARY SEVEN INTERNAL ASSESSMENT

2024

MATHEMATICS

Time Allowed: 2 hours 30 minutes

Index No.

Random No.						Personal No.		

Candidate's Name: SSEBALU ISMAEL

Candidate's signature: 0774006787

School Name: Marking guide/ assistant

District/Municipality: WAKISO

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

Read the following Instructions Carefully:

1. This paper has two sections A and B.
2. Section A has 20 questions (40 marks).
3. Section B has 12 questions (60 marks).
4. Answer all questions. All the working for both sections A and B must be shown in spaces provided.
5. All working must be done using a blue or black ball point pen or ink. Any work done in pencil other than graphs and diagrams will not be marked.
6. No calculators are allowed in the examination room.
7. Unnecessary changes and crossings in your work and handwriting that cannot easily be read may lead to loss of marks.
8. Do not write anything in the boxes indicated "For examiners' use only"
9. Write your name on all pages.

FOR EXAMINERS' USE ONLY

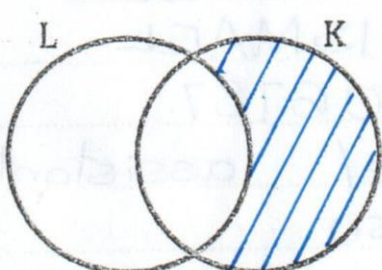
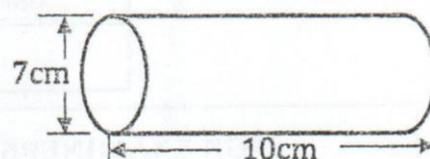
FOR EXAMINERS' USE ONLY		
Qn. No	Marks	EXR'S NO.
1-5		
6-10		
11-15		
16-20		
21-22		
23-24		
25-26		
27-28		
29-30		
31-32		
TOTAL		

ORGANISED AND PUBLISHED BY:

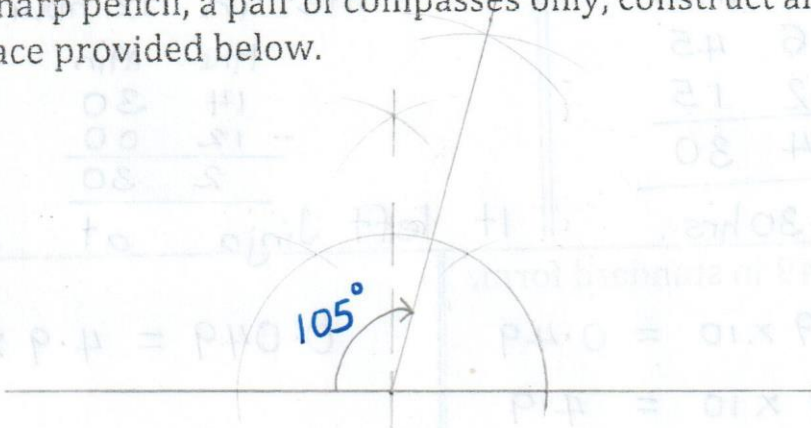
WADEB

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SECTION A (40 MARKS)

1.	Work out: $12 \div 3 = 4$ $\begin{array}{r} 4 \\ 3 \overline{)12} \\ \underline{12} \\ 00 \end{array}$ $3 \times 4 = 12$ $12 \div 3 = 4$	2.	Express CXLV in Hindu Arabic numerals. $C \cdot XL \cdot V$ $100 + 40 + 5$ 145 $\begin{array}{r} 100 \\ 40 \\ + 5 \\ \hline 145 \end{array}$
3.	In the diagram below, shade only the region that represents K. 	4.	Write in figures: Two and two thousandths. $Two = 2$ $Two thousandths = \frac{2}{1000}$ $2 + \frac{2}{1000}$ $2 + 0.002$ $\begin{array}{r} 2.000 \\ + 0.002 \\ \hline 2.002 \end{array}$
5.	Find the volume of the cylinder below. (use: $\pi = 3\frac{1}{7}$) 	$Vol = \text{Base area} \times \text{height}$ $Vol = \pi r^2 \times h$ $Vol = 3\frac{1}{7} \times \frac{7}{2} \times \frac{7}{2} \times 10 \text{cm}$ $Vol = \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} \times \frac{5}{1}$ $\begin{array}{r} 77 \\ \times 5 \\ \hline 385 \end{array}$ $Vol = 385 \text{cm}^3$	
6.	Find the next two numbers in the sequence below. $22, 20, 17, 15, 12, \underline{10}, \underline{7}$ $22 - 2 = 20$ $20 - 3 = 17$ $17 - 2 = 15$ $15 - 3 = 12$ $12 - 2 = 10$ $10 - 3 = 7$		
7.	In a dairy, the cost of a litre of milk decreased from shs. 3,000 to shs. 2,400. What was the percentage decrease? $\begin{array}{r} \text{shs. } 3000 \\ - \text{shs. } 2400 \\ \hline \text{shs. } 600 \end{array}$ Reduction. Percentage decrease. $\left(\frac{\text{Reduction}}{\text{Original price}} \times 100 \right) \%$ $\left(\frac{\text{shs. } 600}{\text{shs. } 3000} \times 100 \right) \%$ 20%		
8.	Workout: $2121 \div 7 = 303$ $\begin{array}{r} 303 \\ 7 \overline{)2121} \\ \underline{21} \\ 0 \\ \underline{0} \\ 21 \\ \underline{21} \\ 00 \end{array}$ $2121 \div 7 = 303$		

9.	A school has 11 male teachers and 7 female teachers. What is the probability of a female teacher chairing a staff meeting? <table border="0"> <tr> <td><u>Total chances.</u></td> <td><u>Probability.</u></td> </tr> <tr> <td>11 + 7</td> <td><u>Chance</u></td> </tr> <tr> <td>18</td> <td><u>Total chances</u></td> </tr> <tr> <td></td> <td>$\frac{7}{18}$</td> </tr> </table>	<u>Total chances.</u>	<u>Probability.</u>	11 + 7	<u>Chance</u>	18	<u>Total chances</u>		$\frac{7}{18}$	10.	Solve: $4(5p - 8) = 48$ <u>Method II</u> <table border="0"> <tr> <td> $4(5p - 8) = 48$ $20p - 32 = 48$ $20p - 32 + 32 = 48 + 32$ $20p = 80$ $\frac{20p}{20} = \frac{80}{20}$ $p = 4$ </td> <td> $4(5p - 8) = 48$ $\frac{4(5p - 8)}{4} = \frac{48}{4}$ $5p - 8 = 12$ $5p - 8 + 8 = 12 + 8$ $5p = 20$ $\frac{5p}{5} = \frac{20}{5}$ $p = 4$ </td> </tr> </table>	$4(5p - 8) = 48$ $20p - 32 = 48$ $20p - 32 + 32 = 48 + 32$ $20p = 80$ $\frac{20p}{20} = \frac{80}{20}$ $p = 4$	$4(5p - 8) = 48$ $\frac{4(5p - 8)}{4} = \frac{48}{4}$ $5p - 8 = 12$ $5p - 8 + 8 = 12 + 8$ $5p = 20$ $\frac{5p}{5} = \frac{20}{5}$ $p = 4$
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11.	A taxi travelling from Jinja to Wakiso arrived at 16:45 hours. If it took 2 hours and 15 minutes travelling, at what time did it leave Jinja for Wakiso? (give time in 12 hour clock system) <u>Starting time = Ending time - Duration.</u> <table border="0"> <tr> <td> Hrs Min $\begin{array}{r} 16 \quad 45 \\ - 2 \quad 15 \\ \hline 14 \quad 30 \end{array}$ 14:30 hrs. </td> <td> Time in 12 hour clock system. Hrs Min $\begin{array}{r} 14 \quad 30 \\ - 12 \quad 00 \\ \hline 2 \quad 30 \end{array}$ It left Jinja at 2:30 p.m </td> </tr> </table>			Hrs Min $\begin{array}{r} 16 \quad 45 \\ - 2 \quad 15 \\ \hline 14 \quad 30 \end{array}$ 14:30 hrs.	Time in 12 hour clock system. Hrs Min $\begin{array}{r} 14 \quad 30 \\ - 12 \quad 00 \\ \hline 2 \quad 30 \end{array}$ It left Jinja at 2:30 p.m								
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12.	Write 0.049 in standard form. <table border="0"> <tr> <td> $0.049 \times 10 = 0.49$ $0.49 \times 10 = 4.9$ 4.9×10^{-2} </td> <td> $0.049 = 4.9 \times 10^{-2}$ </td> </tr> </table>			$0.049 \times 10 = 0.49$ $0.49 \times 10 = 4.9$ 4.9×10^{-2}	$0.049 = 4.9 \times 10^{-2}$								
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13.	A money lender gives a simple interest of 9% per week. What will be the interest on shs. 161,000 for 4 days? $S.I = P \times R \times T$ <table border="0"> <tr> <td> 7 days = 1 week 1 day = $\frac{1}{7}$ weeks 4 days = $4 \times \frac{1}{7}$ weeks 4 days = $\frac{4}{7}$ weeks </td> <td> Shs. 161,000 $\times \frac{9}{100} \times \frac{4}{7}$ 230 Shs. 161,000 $\times \frac{9}{100} \times \frac{4}{7}$ Shs 8280 The interest will be shs. 8280 </td> <td> $\begin{array}{r} 161000 \\ \times 23 \\ \hline 322000 \\ 482000 \\ \hline 828000 \end{array}$ </td> </tr> </table>			7 days = 1 week 1 day = $\frac{1}{7}$ weeks 4 days = $4 \times \frac{1}{7}$ weeks 4 days = $\frac{4}{7}$ weeks	Shs. 161,000 $\times \frac{9}{100} \times \frac{4}{7}$ 230 Shs. 161,000 $\times \frac{9}{100} \times \frac{4}{7}$ Shs 8280 The interest will be shs. 8280	$\begin{array}{r} 161000 \\ \times 23 \\ \hline 322000 \\ 482000 \\ \hline 828000 \end{array}$							
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14. The exterior angle of a polygon is 72°, name the polygon. No. of sides. Exterior angles sum Each exterior angle $\frac{360^\circ}{72} = 5$ 5 sides Name of the polygon. Pentagon.	15. Find the mean of $(7p - 4)$, 19 and $2p$ Mean = $\frac{\text{sum of data}}{\text{number of data}}$ $\frac{7p-4+19+2p}{3} = \frac{9p+15}{3}$ $\frac{7p+2p+19-4}{3} = \frac{9p+15}{3}$ $3p+5$																								
16. The number of proper subsets in set K is 63. Find $n(k)$ $2^n - 1 = 63$ $2^n - 1 + 1 = 63 + 1$ $2^n = 64$ $2^n = 2 \times 2 \times 2 \times 2 \times 2 \times 2$ $2^n = 2^6$ $n = 6$	$n(k) = 6$ <table border="1"> <tr><td>2</td><td>64</td></tr> <tr><td>2</td><td>32</td></tr> <tr><td>2</td><td>16</td></tr> <tr><td>2</td><td>8</td></tr> <tr><td>2</td><td>4</td></tr> <tr><td>2</td><td>2</td></tr> <tr><td></td><td>1</td></tr> </table>	2	64	2	32	2	16	2	8	2	4	2	2		1										
2	64																								
2	32																								
2	16																								
2	8																								
2	4																								
2	2																								
	1																								
17. Using a sharp pencil, a pair of compasses only, construct an angle of 105° in the space provided below. 																									
18. Work out the product of the 5th and the 8th composite number. Composite numbers. 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, ... 5th 8th Product 10×15 150	19. It is July now, which month of the year was it 114 months ago? <table border="1"> <tr> <th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>June</th><th>July</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>0</td> </tr> </table> July - 114 = — (mod 12) $7 - \frac{114}{12} = \text{— (mod 12)}$ $7 - (9 \text{ rem } 6) = \text{— (mod 12)}$ $7 - 6 = 1 \text{ (mod 12)}$ $7 - 114 = 1 \text{ (mod 12)}$ 1 represent January. So, it was January.	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	1	2	3	4	5	6	7	8	9	10	11	0
Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec														
1	2	3	4	5	6	7	8	9	10	11	0														

20. In a line of vehicles, a lorry is the 7th from one side of the line and it is the 13th from the other side of the line. How many vehicles are in the line altogether?

$$(Position 1 + Position 2) - 1$$

$$(7 + 13) - 1$$

$$20 - 1$$

$$19$$

19 vehicles are in a line

left	middle	Right
6	Lorry	12

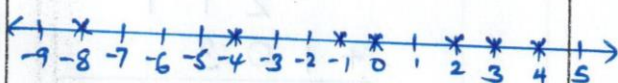
$$6 + 1 + 12$$

19 vehicles.

SECTION B (60 MARKS)

21. (a) Arrange the following integers in descending order.

-8, +2, -4, 0, +4, -1, +3



descending order

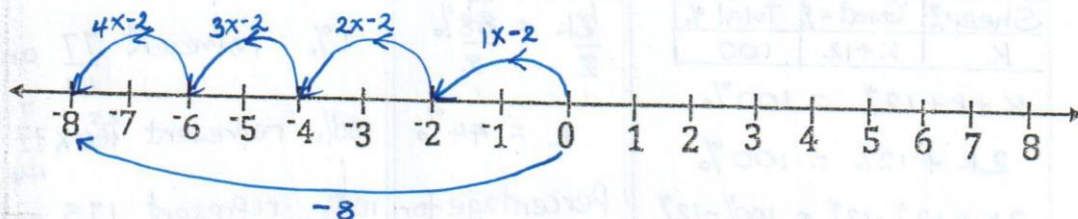
+4, +3, +2, 0, -1, -4, -8 (2mks)

- (b) Use $>$, $<$ or $=$ to complete the statement below correctly.

$$-9 \quad \quad \quad < \quad \quad +9$$

(1mk)

- (c) Work out 4×-2 on the number line below.



$$4 \times -2 = -8$$

(2mks)

22. 1 US dollar = Ug shs 3500 and 1 Kenyan shilling (Ksh) = Ug shs 35

- (a) Opio has 28 US dollars and 148 Kenyan shillings. How much money in Ugandan shillings does he have?

1 US dollar for Ug.shs 3500

28 US dollars for $28 \times \text{Ug.shs. } 3500$

for Ug.shs. 98,000

Kenyan shillings to Ug.shs.

Ug.shs 35×148

Ug.shs 5,180

Total amount in Ug.shs

Ug.shs. 98,000

+ Ug.shs. 5,180

Ug.shs. 103,180

(3mks)

- (b) If a shirt costs Ksh. 40,000, what is the cost of the shirt in US dollars?

Amount in Ug.shs.

Ug.shs $35 \times 40,000$

Ug.shs 1,400,000

Amount in US dollars.

Ug.shs 1 = $\frac{1}{3500}$ US dollar.

Ug.shs 1,400,000 = $\frac{1,400,000}{3500} \times 1 \text{ US dollar}$

400 US dollars

A shirt costs

400 US dollars

(2mks)

23. Below is multiplication of two numbers in base five on abacus. Study and answer the questions that follow.

Five fives five ones fives ones five five fives Five fives five ones

1 0 3_{five} × 1 2_{five} = 1 2 4 1_{five}

(a) Write down the multiplication number shown on the abacus.

$103_{\text{five}} \times 12_{\text{five}}$ (2mks)

(b) Work out the multiplication and show the answer on the third abacus.

$$\begin{array}{r} 103_{\text{five}} \\ \times 12_{\text{five}} \\ \hline 211 \\ + 103 \\ \hline 1241_{\text{five}} \end{array}$$
 (3mks)

$6 \div 5 = 1 \text{ rem } 1$

24. In a farm there are 12% less sheep than goats. If there are 77 sheep, how many animals are in the farm altogether?

let the percentage for sheep be k

Sheep%	Goats%	Total %
k	$k+12$	100

$k + k + 12\% = 100\%$
 $2k + 12\% = 100\%$
 $2k + 12\% - 12\% = 100\% - 12\%$
 $2k = 88\%$

$\frac{1}{2}k = \frac{44\%}{2}$
 $k = 44\%$

Percentage for sheep is 44%

Total animals
 44% represent 77 animals
 1% represent $\frac{77}{44}$ animals
 100% represent $25 \times \frac{77}{44}$ animals
 100% represent 175 animals.
 175 animals are on the farm. (5mks)

25. Irene is 10 years old, Sarah is 30 years old.

(a) After how many years will Sarah's age be twice Irene's age?

let years be k

	Irene	Sarah
Now	10	30
After	$k+10$	$k+30$

$2(k+10) = k+30$
 $2k + 20 = k + 30$
 $2k - k + 20 = k - k + 30$
 $k + 20 = 30$
 $k + 20 - 20 = 30 - 20$
 $k = 10$

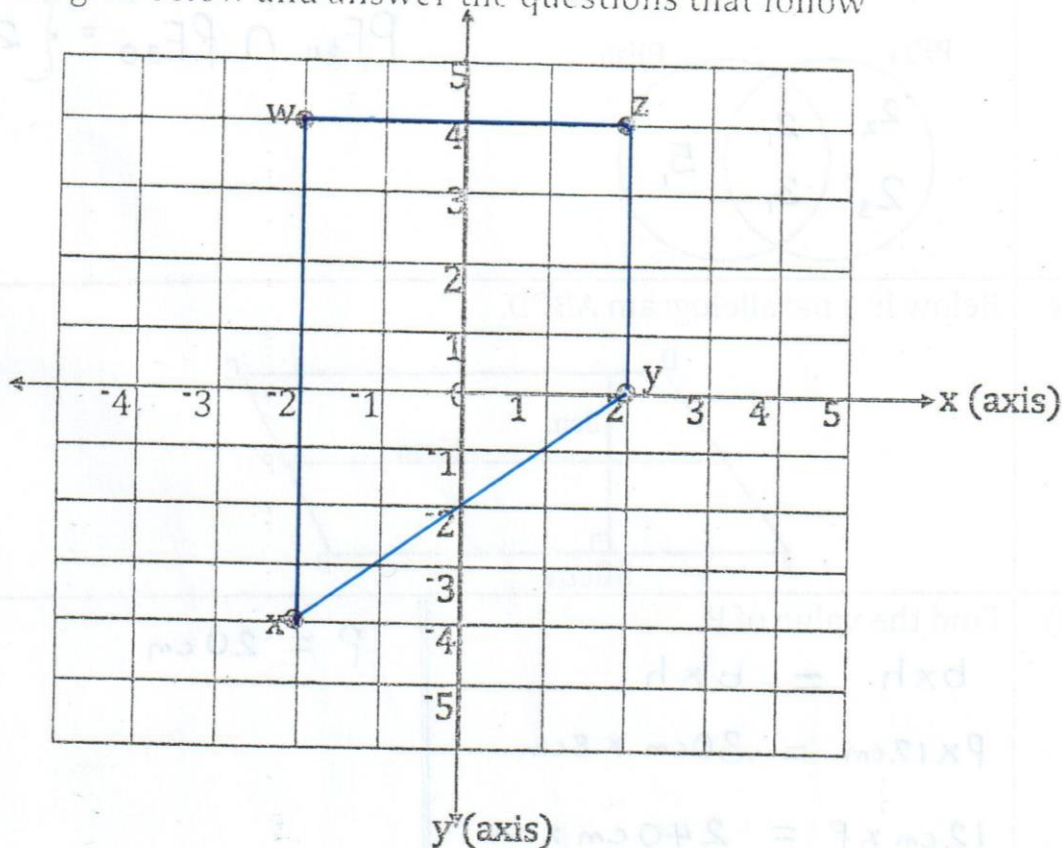
After 10 years. (3mks)

What will be their total age by then?

$(k+10) + (k+30)$
 $10+10 + 10+30$
 $20 + 40$
 60

Their total age will be 60 years. (2mks)

26. Study the grid below and answer the questions that follow



(a) Name the point

(i) w $(-2, 4)$

(ii) y $(2, 0)$

(2mks)

(b)

Join the points to form a geometrical figure and workout its area if 1 square represents 1dm.

$$\text{Area} = \frac{h(a+b)}{2}$$

$$\text{Area} = \frac{4\text{dm} (4\text{dm} + 8\text{dm})}{2}$$

$$\text{Area} = \frac{2}{4\text{dm} \times 12\text{dm}}$$

$$\text{Area} = 24 \text{ sq. dm} \quad (3\text{mks})$$

27. Express the following numbers as products of their prime factors and write the answers in set notation.

(i) 24

2	24
2	12
2	6
3	3
	1

$$24 = 2 \times 2 \times 2 \times 3$$

$$PF_{24} = \{2, 2, 2, 3\}$$

(ii) 30

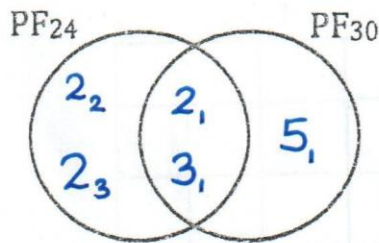
2	30
3	15
5	5
	1

$$30 = 2 \times 3 \times 5$$

$$PF_{30} = \{2, 3, 5\}$$

(1mk each)

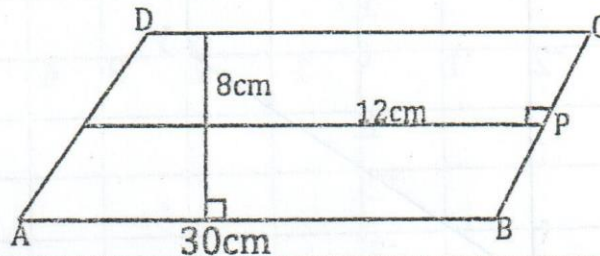
(b) Show the factors on the Venn diagram below.



$$PF_{24} \cap PF_{30} = \{2, 3\}$$

(3mks)

28. Below is a parallelogram ABCD.



(a) Find the value of P.

$$b \times h = b \times h$$

$$P \times 12\text{cm} = 30\text{cm} \times 8\text{cm}$$

$$12\text{cm} \times P = 240\text{cm} \times \text{cm}$$

$$\frac{12\text{cm} \times P}{12\text{cm}} = \frac{240\text{cm} \times \text{cm}}{12\text{cm}}$$

$$P = 20\text{cm}$$

(3mks)

(b) Work out the perimeter of the parallelogram ABCD.

$$30\text{cm} + 20\text{cm} + 30\text{cm} + 20\text{cm}$$

$$50\text{cm} + 50\text{cm}$$

$$100\text{cm}$$

$$\begin{array}{r} 30 \\ + 20 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 50 \\ + 50 \\ \hline 100 \end{array}$$

(2mks)

29. During an oral interview, Mr. Kihene awarded 5 marks for every correct answer given and deducted 2 marks for every wrong answer given. If he asked 24 questions and Amutos got 43 marks, how many wrong answers did Amutos give?

let correct answers be k

	Correct	Wrong	Total
Qns	k	24 - k	24
Marks	5xk	2(24 - k)	43
	5k	48 - k	

$$5k - (48 - 2k) = 43$$

$$5k - 48 + 2k = 43$$

$$5k + 2k - 48 = 43$$

$$7k - 48 + 48 = 43 + 48$$

$$7k = 91$$

$$\frac{7k}{7} = \frac{91}{7}$$

$$k = 13$$

Wrong questions answers

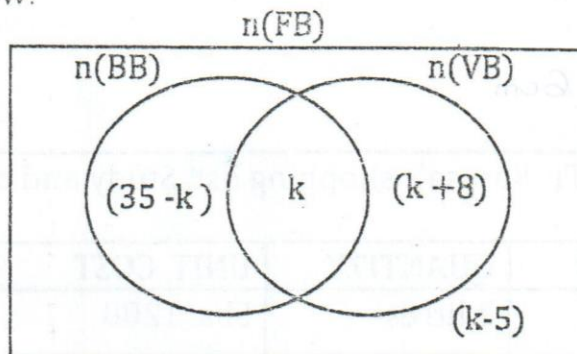
$$\begin{array}{r} 24 \\ - 13 \\ \hline 11 \end{array}$$

Amutos gave 11 wrong answers

(5mks)

7
14
21
28
35
42
49

- 30 The Venn diagram below shows a school team of players who play football (FB), basket ball (BB) and volley ball (VB). Study it and answer the questions that follow.



- (a) If 17 players do not play basket ball, find the number of players who play all the three games.

$$(k+8) + (k-5) = 17$$

$$k+8 + k-5 = 17$$

$$k+k+8-5 = 17$$

$$2k + 3 = 17$$

$$2k + 3 - 3 = 17 - 3$$

$$2k = 14$$

$$\frac{2k}{2} = \frac{14}{2}$$

$$k = 7$$

7 pupils play all the three games. (3mks)

- (b) How many players are in the school team?

$$(35-k) + k + (k+8) + (k-5)$$

$$(35-7) + 7 + (7+8) + (7-5)$$

$$28 + 7 + 15 + 2$$

$$28 + 2 + 15 + 7$$

$$30 + 22$$

$$52$$

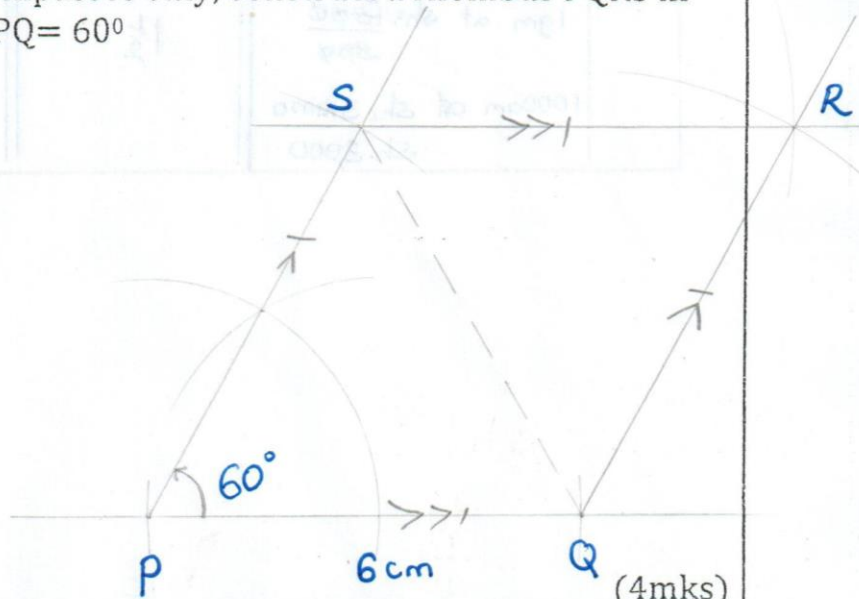
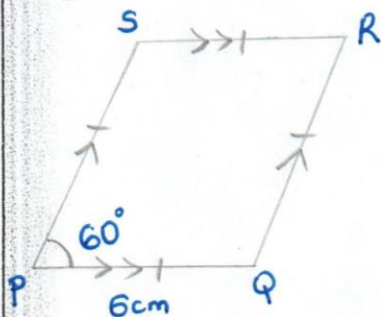
$$\begin{array}{r} 30 \\ + 22 \\ \hline 52 \end{array}$$

52

52 players are in a school team. (2mks)

31. Using a ruler and a pair of compasses only, construct a rhombus PQRS in which $PQ = 6\text{cm}$ and angle $SPQ = 60^\circ$

Sketch



(4mks)

(b) Measure diagonal SQ.

6cm

$$\overline{SQ} = 6\text{cm}$$

(1mk)

32. Below is Tr. Kapisa's shopping list. Study and complete it correctly.

ITEM	QUANTITY	UNIT COST	AMOUNT
Milk	2 litres	Shs. 1200	Shs. <u>2,400</u>
Salt	500gm	Shs. <u>3,000</u>	Shs. 1500
Posho	<u>1½</u> kg	Shs. 3000	Shs. 4500
Soap	3 bars	Shs. <u>4,000</u>	Shs. <u>12,000</u>
TOTAL EXPENDITURE			Shs. 20,400

Milk.

1 litre at shs. 1200
2 litres at shs. 1200 x 2
Shs. 2400

Salt.

1kg = 1000gm.
500gm at shs. 1500
1gm at shs. $\frac{1500}{500}$
1000gm at shs. 3 x 1000
Shs. 3000

Posho.

Shs. 4500
shs 3000
4500
30
3
2
1½

Amount for 3 items
Amount for Soap.

Sh. 20,400 - (Sh. 2400 +
sh. 1500 +
sh. 4500)
sh. 8,400

Sh. 20,400 - sh. 8,400

Sh. 20,400
- sh. 8,400
sh. 12,000

Unit cost
for Soap.

3 bars at sh. 12,000

1 bar at sh. $\frac{12000}{3}$

1 bar at sh. 4,000

(5mks)