

KAPCHORWA MUNICIPALITY EXAMINATIONS BOARD

PRIMARY SEVEN

MOCKS EXAMINATIONS - 2023

MATHEMATICS

Time allowed: 2 hours 30 minutes

A = 24

B = 26

I = 50%

Random No.						Personal No.		

Candidate's name: CHEMOS MICAIAH

Candidate's Signature: Chemos Micaiah

District ID:

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Read the following instructions carefully:

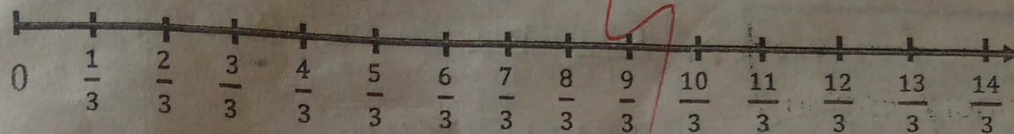
1. Do not write your **school** or **district name** anywhere on this paper.
2. This paper has two sections **A** and **B**. Section **A** has **20 questions** and section **B** has **12 questions**. This paper has **12 pages** printed altogether.
3. Answer **all** questions. All the working for both sections **A** and **B** must be shown in the spaces provided.
4. **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.
5. **No calculators** are allowed in the examination room.
6. Unnecessary **changes** in your work and handwriting that cannot be easily read may lead to loss of marks.
7. Do not fill anything in the table indicated "For examiners' use only" and the boxes inside the question paper.

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		

Turn Over

12. Use the number line below to work out $2 \div \frac{2}{3}$

$$\begin{array}{r} 2 \div \frac{2}{3} \\ \underline{1} \quad \frac{2}{3} \\ 2 \times \frac{3}{2} \\ \underline{1} \quad 3 \\ = 3 \end{array}$$



13. Simplify: $-5 + -8$

$$\begin{array}{r} -5 + (-8) \\ -5 - 8 \\ \hline -13 \end{array}$$

14. Simplify: $3^2 \div 2^{-1}$

$$3^2 \div 2^{-1}$$

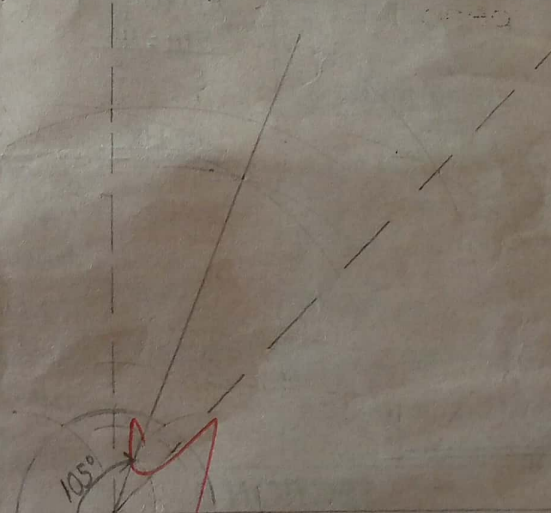
$$3 \times 3 \div \frac{1}{2}$$

$$\frac{9}{1} \div \frac{1}{2}$$

$$\frac{9}{1} \times \frac{2}{1}$$

$$= 18$$

15. Using a ruler and a pair of compasses only, construct an angle of 105° .



16. A mother bought 0.75kg of sugar that she shared among her three children equally. How many grams did each get?

kg	Hg	Dg	Mdg	c	m
1	0	0	0		

$$1\text{kg} \rightarrow 1000\text{g}$$

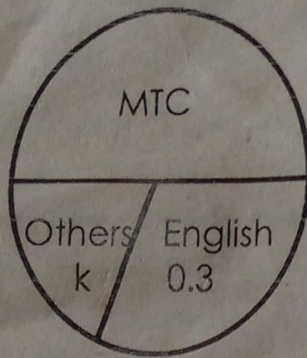
$$0.75\text{kg} \rightarrow ?$$

$$75 \times 1000\text{g}$$

$$\begin{array}{r} 100 \\ 250 \\ \hline = 750\text{g} \\ 3, \end{array}$$

$$= 250\text{grams each}$$

17. The circle graph below shows books in a library. Find the value of k.



$$k + 0.3 + 180 = 360$$

$$\frac{k}{10} + \frac{3}{10} + \frac{180}{10} = \frac{360}{10}$$

$$\frac{(k \times 10)}{10} + \frac{(3 \times 10)}{10} + \frac{(180 \times 10)}{10} = \frac{(360 \times 10)}{10}$$

$$10k + 3 + 1800 = 3600$$

$$10k + 1803 - 1803 = 3600 - 1803$$

$$10k + 0 = 1797$$

$$\frac{10k}{10} = \frac{1797}{10}$$

$$k = 179.7$$

18. Simplify: $3 \times 18 + 18 \times 17$

$$(3 \times 18) + (18 \times 17)$$

$$18(3 + 17)$$

$$18 \times 20$$

$$= 360$$

19. A cyclist left home at 7:15am arriving at his destination at 9:45am. How many hours did he spend traveling?

$$ST = 7:15am$$

$$ET = 9:45am$$

$$D = ?$$

$$D = ET - ST$$

$$= 9:45am$$

$$- 7:15am$$

$$2:30$$

∴ He spent 2hrs 30 minutes

20. m and 4m are complementing angles. Find the value of m.

$$m + 4m = 90$$

$$5m = 90$$

$$\frac{5m}{5} = \frac{90}{5}$$

$$m = 18$$

SECTION B

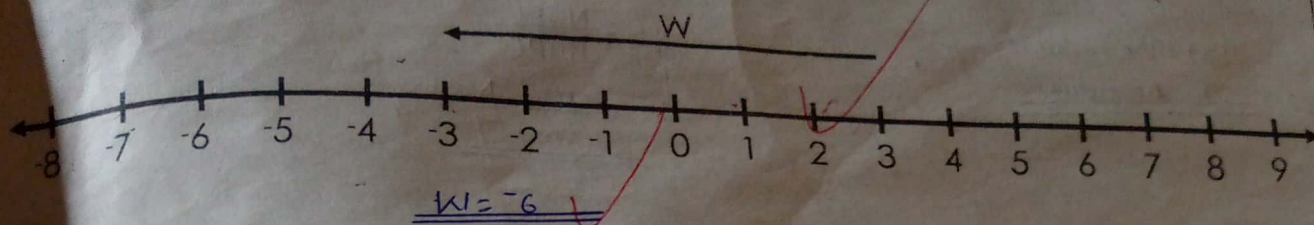
21(a) Deborah borrowed sh 450 from a friend. In order to pay back she got sh 1200 from the grandfather and also received $\frac{2}{3}$ of what she was given by the grandfather from the grandmother.

How much money has she now after paying the friend?

(3mks)

What integer is represented by the arrow marked W?

(2mks)



22(a) Subtract:

(2mks)

$$\begin{array}{r} 11001_{\text{two}} \\ - 1001_{\text{two}} \\ \hline 10000_{\text{two}} \end{array}$$

b) Given that $11_{\text{eight}} = 1001_y$, find the missing base y.

(3mks)

$$11_{\text{eight}} = 1001_y$$

$$\begin{array}{cc} 8^1 & 8^0 \\ 1 & 1 \end{array} = \begin{array}{cccc} y^3 & y^2 & y^1 & y^0 \\ 1 & 0 & 0 & 1 \end{array}$$

$$(1 \times 8^1) + (1 \times 8^0) = (1 \times y^3) + (0 \times y^2) + (0 \times y^1) + (1 \times y^0)$$

$$8 + 1 = y^3 + 0 + 0 + 1$$

$$9 = y^3 + 1$$

$$9 - 1 = y^3 + 1 - 1$$

$$8 = y^3 + 0$$

$$y = \sqrt[3]{8} = 2$$

$$\begin{array}{r} \sqrt{y} = \sqrt{2 \times 2 \times 2} \\ y = 2 \end{array}$$

23. Complete the table below.

a	8	16
20	10	b
4	c	14

$$16 + 10 + 4 = 30$$

$$a + 10 + 14 = 30$$

$$a + 24 - 24 = 30 - 24$$

$$a + 0 = 6$$

$$a = 6$$

$$20 + 10 + b = 30$$

$$30 - 30 + b = 30 - 30$$

$$0 + b = 0$$

$$b = 0$$

$$4 + 14 + c = 30$$

$$18 - 18 + c = 30 - 18$$

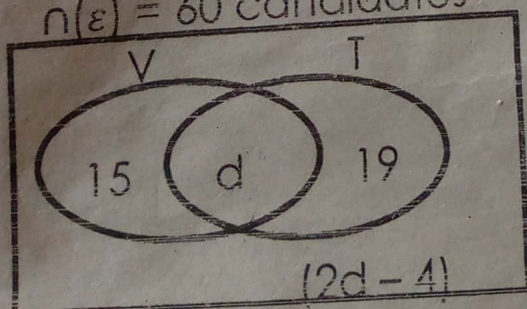
$$0 + c = 12$$

$$c = 12$$

24. The Venn diagram below represents all candidates who play Ludo. Some play Table tennis (T) while others play Volleyball (V). Use it to answer questions that follow.

(2mks)

$n(\varepsilon) = 60$ candidates



(a) Find the value of d.

$$15 + d + 19 = 60$$

$$15 + 19 + d = 60$$

$$34 + d = 60$$

$$34 - 34 + d = 60 - 34$$

$$0 + d = 26$$

$$d = 26$$

b) How many candidates play only one type of game? (2mks)

(15+19) candidates

34 candidates

c) Find the chance of selecting a candidate who plays volleyball. (2mks)

$$C = \frac{NOEC}{NOPC}$$

$$= \frac{41}{60}$$

25(a) Given that $c = d = -5$ and $e = 3$
Evaluate $\frac{e(d^2 - 2c)}{e}$ (2mks)

$$\frac{e(d^2 - 2c)}{e}$$

$$\frac{3(-5^2 - 2 \times -5)}{3}$$

$$-5 \times -5 - 2 \times -5$$

$$25 + 10$$

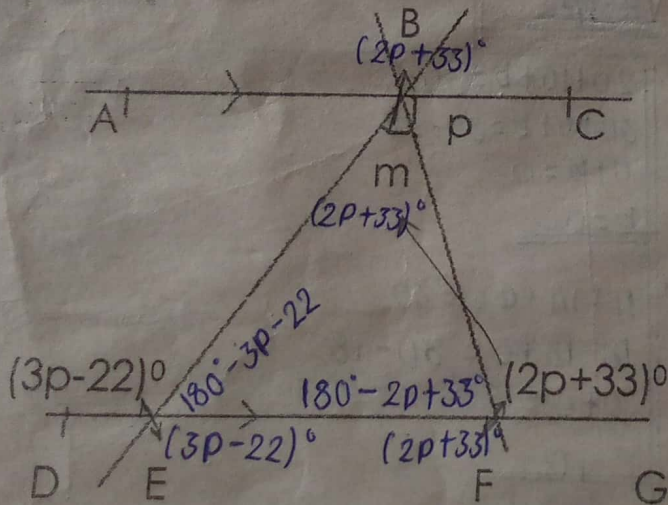
$$= 35$$

b) Abo is 8 years older than Obothi. In six years' time, Abo will be twice as old as Obothi. How old is Abo now? (3mks)

	Obothi	Abo
Now	n	$n+8$
Future	$n+6$	$n+8+6$

$$n+n+8$$

26. Use the diagram below to answer questions that follow.



(a) Find the size of angle marked CBF. (2mks)

$$180^\circ - 3p - 22 + 2p + 33 + 180^\circ - 2p + 33 = 180^\circ$$

$$180^\circ - 22 + 33 + 180^\circ + 33 - 3p + 2p - 2p = 180^\circ$$

$$404^\circ - 3p = 180^\circ$$

$$404^\circ - 404^\circ - 3p = 180^\circ - 404^\circ$$

$$0 - 3p = -224$$

$$\frac{-3p}{-3} = \frac{-224}{-3}$$

$$p = 74\frac{2}{3}$$

$$2p + 33^\circ + p = 180^\circ \text{ (co-interior)}$$

$$3p + 33 - 33 = 180^\circ - 33^\circ$$

$$3p + 0 = 147$$

$$\frac{3p}{3} = \frac{147}{3}$$

$$p = 49$$

$$p = 49$$

(2mks)

Calculate the size of angle m in degrees.

$$2p + 3$$

27 Michael borrowed sh.120,000 from a micro finance bank that charges an interest rate of 3% per annum. What amount will he pay back after a period of 9 months? (5mks)

$$\begin{aligned}
 S.I &= P \times R \times T \\
 &= \text{sh. } 120,000 \times \frac{3}{100} \times \frac{9}{12} \\
 &= \text{sh. } 300 \times 9 \\
 &= \text{sh. } 2700
 \end{aligned}$$

$$\begin{aligned}
 \text{Amount} &= P + S.I \\
 &= \text{sh. } 120,000 + \text{sh. } 2700 \\
 &= \text{sh. } 122700
 \end{aligned}$$

28. the interior angle of a regular polygon is five times the exterior angle.

a) Name the polygon. (3mks)

Let the exterior angle be h

$$\begin{aligned}
 180(n-2) &= 30 \\
 180n - 360 + 360 &= 30 + 360 \\
 180n + 0 &= 400 \\
 180n &= 400 \\
 180 &= 180 \\
 n &= 180 \\
 h &= 30
 \end{aligned}$$

All exterior angles
Each exterior angle
 $= 360^\circ$
 $= 30^\circ$
 $= 12 \text{ sides}$
Decagon

b) Find the interior angle sum of the polygon above. (2mks)

$$\begin{aligned}
 24 \\
 (n-2) &= 12 \\
 180(n-2) &= 180(12-2) \\
 180(12-2) &= 180 \times 10 \\
 &= 1800^\circ
 \end{aligned}$$

29. The table below shows marks attained by candidates in a class.

Percentage Mark	82	45	94	36
Frequency	5	2	1	1

a) How many candidates sat the test? (1mk)

$$\begin{aligned}
 (5+2+1+1) \text{ candidates} \\
 \underline{\underline{9 \text{ candidates}}}
 \end{aligned}$$

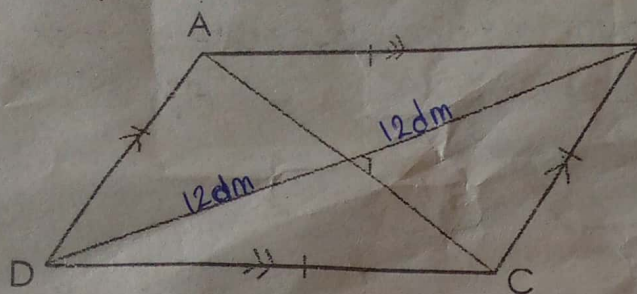
b) How many pupils got below the average mark? (3mks)

$$\begin{aligned}
 \text{AV} &= \frac{\text{sum of all data}}{\text{No of all data}} \\
 &= \frac{(82 \times 5) + (45 \times 2) + (94 \times 1) + (36 \times 1)}{9}
 \end{aligned}$$

c) Work out their range mark. (1mk)

$$\begin{aligned}
 R &= H - L \\
 &= (94 - 36) \text{ marks} \\
 R &= \underline{\underline{58 \text{ marks}}}
 \end{aligned}$$

30. The perimeter of the shape below is 60dm. If BD is 24dm,



B (a) Find the length AC. (3mks)

$$P = s + s + s + s$$

$$60\text{dm} =$$

$$P = s + s + s + s$$

$$\frac{60\text{dm}}{4} = \frac{15}{1}$$

$$\frac{15}{1} = s$$

$$15\text{dm} = s$$

31. Ndekeyi went shopping with a twenty thousand shilling note and bought the following items:

- 500ml of milk at sh.1800 per litre.
- 2 loaves of bread at sh.3500 per loaf.
- 2kgs of wheat flour at sh.2500 per kg.
- 2500g of sugar at sh.5000.

How much change did she carry home?

(5mks)

Milk

$$\frac{500}{1000} \times \text{sh. } 1800$$

$$\frac{500}{1000} \times 1 = \frac{500}{1000} \times 1800$$

Milk

$$\text{sh. } 1800 \times \frac{500}{1000}$$

$$\text{sh. } 1800 \times \frac{2}{1000}$$

$$= \text{sh. } 360$$

Bread

$$\text{sh. } 3500$$

$$\times 2$$

$$\text{sh. } 7000$$

Wheat

$$\text{sh. } 2500$$

$$\times 2$$

$$\text{sh. } 5000$$

Sugar

$$\text{sh. } 5000$$

Total

$$\text{sh. } 5000$$

$$+ \text{sh. } 7000$$

$$\text{sh. } 5000$$

$$\text{sh. } 17360$$

$$\text{sh. } 17360$$

Change

$$\text{sh. } 20000$$

$$\text{sh. } 17360$$

$$\text{sh. } 2640$$

$$\text{sh. } 2640$$

$$\text{sh. } 2640$$

$$\text{sh. } 2640$$

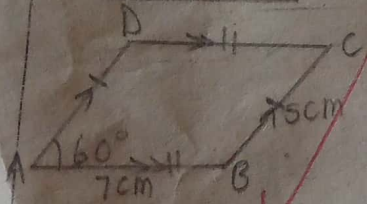
$$\text{sh. } 2640$$

she carried home

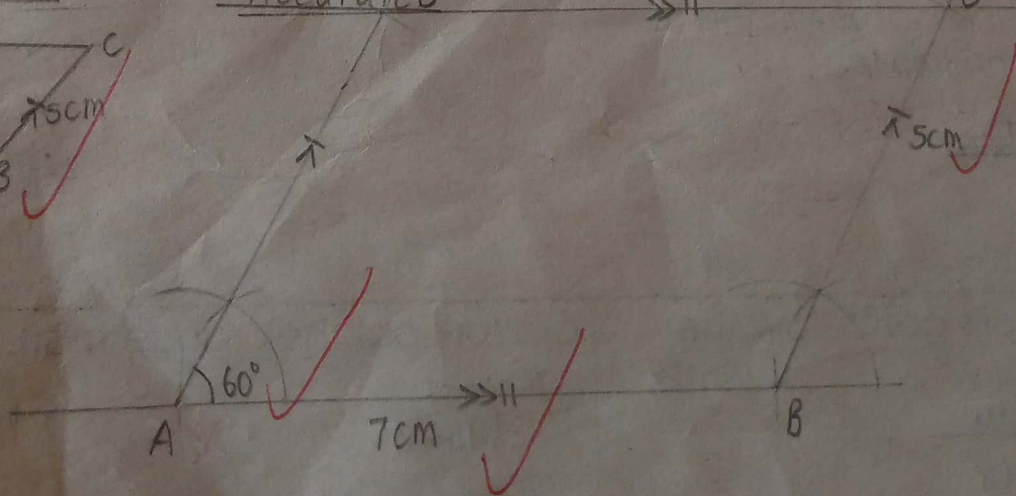
32. With the help of a pair of compasses and a ruler only, construct parallelogram ABCD such that line AB = 7cm, Angle DAB = 60° and BC = 5cm.

(4mks)

Sketch



Accurated



(1mk)

Measure diagram AC.

$$AC = 10.4\text{cm}$$