SUREKEY EXAMINATIONS BOARD

PRIMARY SEVEN PLE PREPARATION SET ONE

2025

MATHEMATICS

OFFICIAL MARKING GUIDE

Read the following instructions carefully:

1. Do not forget to write your **school** and **district name** on this paper.
2. This paper has two sections: **A** and **B**. Section **A** has **20** questions and Section **B** has **12** questions. The paper has **15 printed pages** 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 easily be read 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´S NO.**
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

 0700758668 **Turn Over**

SECTION A: 40 MARKS

Answer **all** questions in this Section

Questions **1** to **20** carry two marks each

1. Workout:

$$\begin{array}{r} 6\ \ 2 \\ \times\ \ 4 \\ \hline 2\ 4\ \ 8 \end{array}$$

$4 \times 2 = 8$

$6 \times 4 = 24$

2. Write "One million twenty-four" in numerical figures.

$$\begin{array}{r} 1{,}000{,}000 \\ +\qquad 24 \\ \hline 1{,}000{,}024 \end{array}$$

3. Given that Set Q = {m, n}. Write all the subsets that can be formed from Set Q.

$\{\ \},\ \{m\},\ \{n\},\ \{m, n\}$

4. Simplify the algebraic expression 3p + k + 4k – k – 8p to its possible lowest terms.

$3p - 8p + k + 4k - k$

$^{-}5p + 5k - k$

$^{-}5p + 4k\ //\ 4k - 5p$

5. Solve: $\frac{2}{3} + m = 5$ (finite 7)

$\frac{2}{3} \times 3 + (3 \times m) = 5 \times 3$ (finite 7)

$2 + 3m = 15$ (finite 7)

$2 - 2 + 3m = 15 - 2$ (finite 7)

$3m = 13$ (finite 7)

Equivalent numbers

{13, 20, 27 …}

$3m = 27$ (finite 7)

$\frac{3m}{3} = \frac{27}{3}$

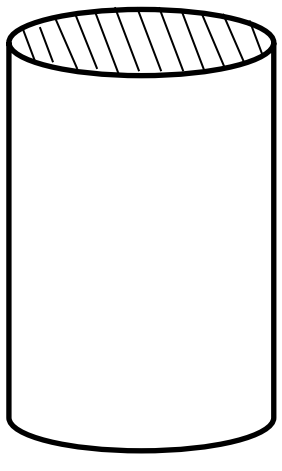
$m = 9$ (finite 7)

$m = 9 \div 7$ (finite 7)

$m = 1$ rem 2 (finite 7)

$m = 2$(finite 7)

6. The area of the shaded part of the cylinder below is $58cm^2$. Calculate its volume. (Use $\pi = \frac{22}{7}$)



$Volume = base\ area \times height$

$= 58cm^2 \times 12cm$

$= 696cm^3$

7. Workout: $42 \div (7 \times 3) + 6^0$. ***BODMAS***

$42 \div 21 + 6^0$
$2 + 1$
3

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8. Find the largest factor which is common in 28 and 36.

GCF of 28 and 36

2	***28***	***36***
2	***14***	***18***
	7	***9***

GCF = 2 x 2
= 4

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9. Osei read 60 pages of a novel book which was equivalent to $\frac{5}{8}$. Find the the total number of pages contained in the whole novel book.

Number of pages

$60 \div \frac{5}{8}$
$\cancel{60} \times \frac{8}{\cancel{5}}$
12×8
96 pages

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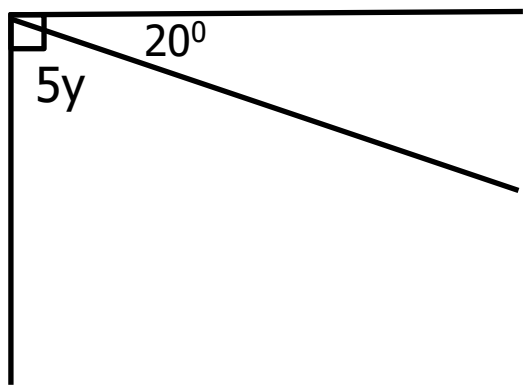
10. In the diagram below, workout the value of y in degrees.



Number of y

$20^0 + 5y = 90^0$
$20^0 - 20^0 + 5y = 90^0 - 20^0$
$5y = 70^0$
$\frac{\cancel{5}y}{\cancel{5}} = \frac{70^0}{\cancel{5}}$
$y = 14^0$

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11. A stationary seller made a profit of Sh.6,000 on selling 12 boxes of dustless chalk at Sh.54,000. At how much money did he buy each box of dustless chalk?

Buying price of 12 boxes

Sh. $\cancel{54}^{4}{}^{14}$,000
Sh. 6,000
Sh.48,000

12 boxes cost sh. 48,000
1 box costs sh. $\frac{48{,}000^{4000}}{\cancel{12}}$
1 box costs sh. 4,000

He bought each box of dustless chalk at sh.4,000

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12. What number is represented by the standard form 4.53×10^3 ?

$\frac{453}{100} \times 10 \times 10 \times 10$

$\frac{453}{\cancel{100}} \times \cancel{10} \times \cancel{10} \times 10$

453×10

4530

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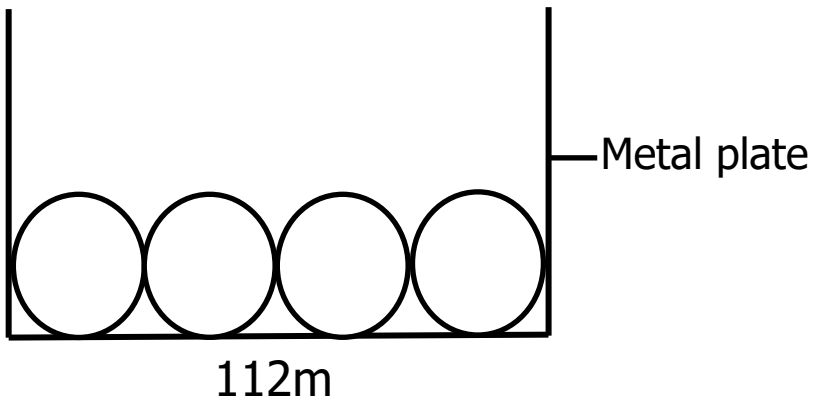
13. The diagram below shows four circular plates of the same size along one of a metal plate of length 112 metres.



Find the radius of each circular plate.

Diameter of each	Radius of each
4 plates rep 112m	Radius = D ÷ 2
1 plate rep $\frac{112m}{4}$	= 28m ÷ 2
1 plate rep 28m	= 14m

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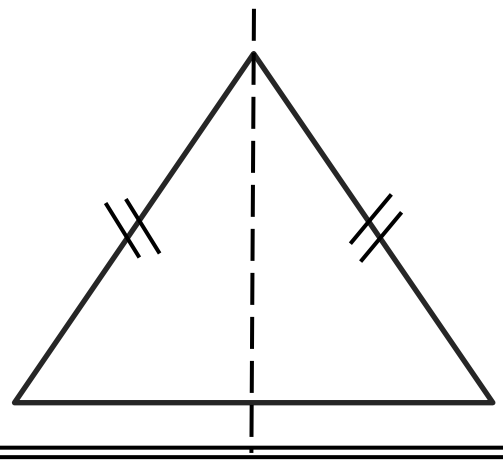
14. Draw an isosceles triangle in the space provided below and on it, show all the lines of folding symmetry.



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15. Find the sum of 103_{four} and 122_{four}.

$$\begin{array}{r} \overset{1}{} \\ 103_{four} \\ +\ 122_{four} \\ \hline 231_{four} \end{array}$$

$2 + 3 = 5$
$5 \div 4 = 1$ rem 1
$1 + 2 = 3$
$1 + 1 = 2$

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16. At what speed can you drive a vehicle through a distance of 108km in 2 hours and 15 minutes?

Speed = Distance ÷ Time	$\text{Speed} = \frac{\overset{12}{\cancel{108}}\text{km} \times 4}{\cancel{9}\text{h}}$
$= 108\text{km} \div 2\frac{\cancel{15}}{\cancel{60}}\text{ hr}$	$= 12\text{ km} \times 4/\text{h}$
$= 108\text{km} \div 2\frac{1}{4}\text{hr}$	$= 48\text{km/h}$
$= 108\text{km} \div \frac{9}{4}\text{ hr}$	

17. A school hired 15 builders and they constructed the Main Hall block in 16 days. How many builders would the school have hired if they had to complete the hall in 6 days?

15 builders take 16 days
1 builder takes 16 x 15
1 builder takes 240 days
240 days are taken by 1 builder
6 days need 240 ÷ 6
6 days need 40 builders
The school would have hired 40 builders to complete the hall in 6 days.

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18. Workout: $\frac{6}{7} - \frac{2}{3}$.

LCM = 21

$$\frac{(6 \times 3) - (2 \times 7)}{21}$$

$$\frac{18 - 14}{21}$$

$$\frac{4}{21}$$

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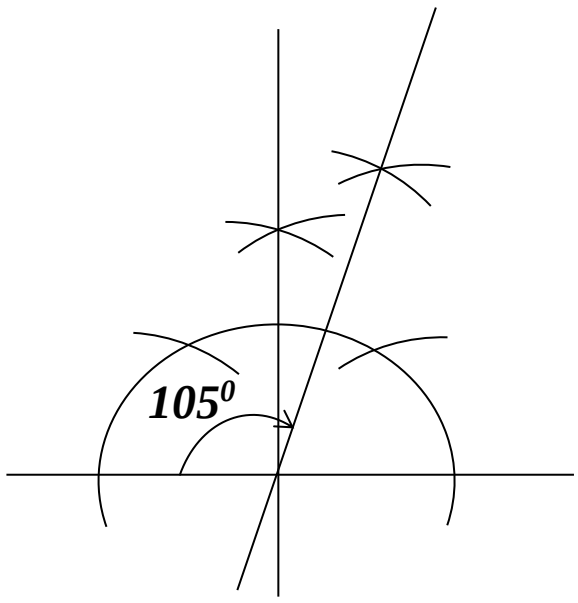
19. Using a sharp pencil a ruler and a pair of compasses only, construct an angle of 105^0 in the space below.



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20. Mr. Kasirye rears two types of chicken, broilers and layers in the ratio 7:4 respectively. If the total number of chicken he rears is 440, how many are broilers?

Total ratio = 7 + 4
= 11 parts

Number of broilers

$$\frac{7}{11} \times 440$$

$$\frac{7}{\cancel{11}} \times \overset{40}{\cancel{440}}$$

7 x 40
280 broilers

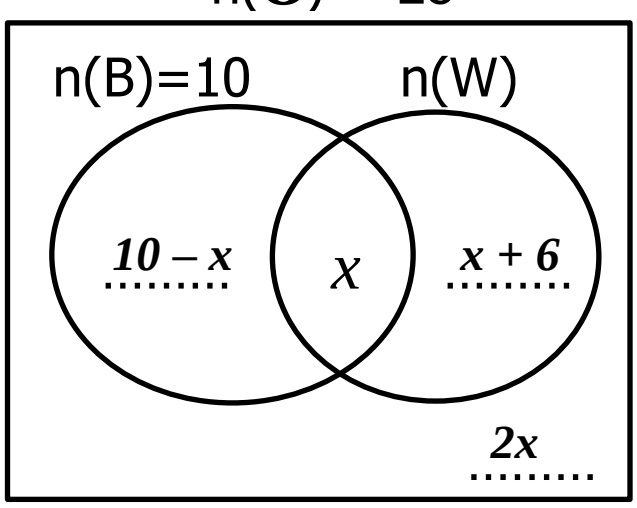
SECTION B: 60 MARKS

Answer **all** questions in this section

Marks for each question are indicated in brackets.

21. Given that n(B) = 10, n(B ∩ W) = x, n(W – B) = x +6, n($\mathcal{E}$) = 28 and n(B ∪ W)' is twice n(B ∩ W).

(a) Use the information above to complete the Venn diagram below. (03 Marks)



(b) Find the value of x. (02 Marks)

$$10 - x + x + x + 6 + 2x = 28$$
$$10 + 6 + x + 2x = 28$$
$$16 + 3x = 28$$
$$16 - 16 + 3x = 28 - 16$$
$$\frac{3x}{3} = \frac{12}{3}$$
$$x = 4$$

22. (a) Solve: $3^{4t} = 3^{t+6}$. (02 Marks)

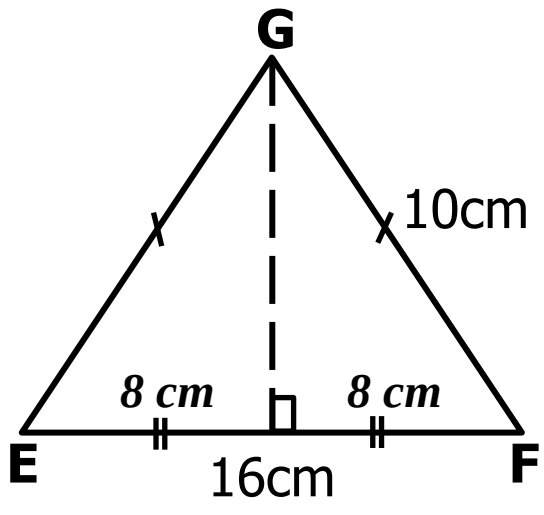
$$4t = t + 6$$
$$4t - t = t - t + 6$$
$$3t = 6$$
$$\frac{3t}{3} = \frac{6}{3}^{2}$$
$$t = 2$$

(b) Without actual division, show whether 4068 is a multiple of 9. (02 Marks)

$$4 + 0 + 6 + 8$$
$$10 + 8$$
$$18$$

18 is multiple of 9, therefore, 4068 is divisible 9

23. Find the area of the triangle EFG below. (04 Marks)



Height of triangle

$$a^2 = c^2 - b^2$$
$$a^2 = 10^2 - 8^2$$
$$a^2 = (10 \times 10) - (8 \times 8)$$
$$a^2 = 100 - 64$$
$$\sqrt{a^2} = \sqrt{36}$$
$$a = 6 \text{ cm}$$

Height is 6 cm

Area of EFG

$$\text{Area} = \frac{b \times h}{2}$$
$$= \frac{16 \text{ cm} \times 6\text{cm}}{2}$$
$$= 16 \text{ cm} \times 3 \text{ cm}$$
$$= 48\text{cm}^2$$

24. A taxi left Jinja at 11:45a.m. travelling at 80km for every hour to Mukono. The distance the two towns is 160km. Express the time at which the taxi reached Mukono in the 12-hour clock system. (05 Marks)

Time taken

$$Time = distance \div speed$$
$$= 160km \div \frac{80km}{H}$$
$$= 160km \times \frac{h}{80km}$$
$$= \frac{\cancel{160km} \times h}{\cancel{80km}}$$
$$= 2h$$

Time it reached Mukono

$$E.T = D + S.T$$
$$= 11:45 + 2:00$$
$$= 13:45hrs$$

In 12 hour clock

$$= 13:45 - 12:00$$
$$= 01:45\ p.m.$$

25. A Kenyan trader wanted to exchange Ksh.44,000 into Tanzania currency. Use the market rates of exchange below and calculate the amount of Tanzania shillings the trader got. (04 Marks)

1 Kenya Shillings (Ksh) = Ugsh.36.
1 Tanzania Shillings (Tzsh) = Ugsh.24

$$Ksh.\ 1 = Ugsh.36$$
$$Ksh.\ 44,000 = Ugsh.\ 44,000 \times 36$$
$$Ksh.\ 44,000 = Ugsh.\ 1,584,000$$

$$Ugsh.24 = Tzsh.\ 1$$
$$Ugsh.\ 1,584,000 = \frac{1,584,000}{24}$$
$$Ugsh.1,584,000 = Tzsh.66,000$$

26. Primary Seven pupils of Kasumba Primary School performed as follows in the Pre-Registration Exams. $\frac{3}{5}$ passed in Division One, $\frac{1}{2}$ of the remainder in Division Two and 8 pupils passed in other grades.

(a) Find the fraction of the pupils who passed in other grades. (04 Marks)

$$Div\ 1 = \frac{3}{5}$$
$$Rem = \frac{5}{5} - \frac{3}{5}$$
$$= \frac{2}{5}$$
$$Div\ 2 = \frac{1}{2}\ of\ \frac{2}{5}$$

$$Div\ 2 = \frac{1}{\cancel{2}} \times \frac{\cancel{2}}{5}$$
$$Div\ 2 = \frac{1}{5}$$
$$Other\ games = \frac{2}{5} - \frac{1}{5}$$
$$= \frac{2-1}{5}$$

$$= \frac{1}{5}$$

(b) What is the total number of pupils who did the exam? (02 Marks)

$$8 \div \frac{1}{5}$$
$$8 \times \frac{5}{1}$$
$$8 \times 5$$
$$40\ pupils$$

27. (a) Solve the equation: $3k - 5 = 25$. (03 Marks)

$$\begin{aligned} 3k - 5 &= 25 \\ 3k - 5 + 5 &= 25 + 5 \\ 3k &= 30 \\ \frac{3k}{3} &= \frac{30}{3} \\ k &= 10 \end{aligned}$$

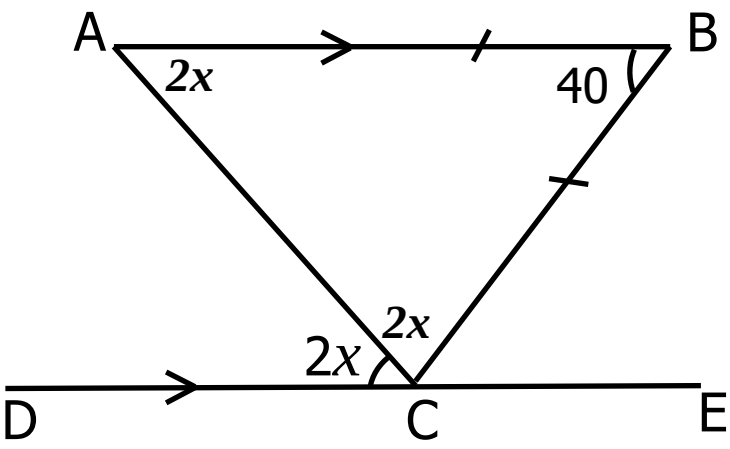
(b) If a = b, b = 6 and c = -2. Find the value of $\frac{b + ac}{3}$ (03 Marks)

$\frac{6 + a \times c}{3}$	$\frac{6 + (^{-}12)}{3}$	$^{-}2$
$\frac{6 + 6 \times {}^{-}2}{3}$	$\frac{6 - 12}{3}$	
$\frac{6 + {}^{-}12}{3}$	$\frac{{}^{-}6}{3}$	

28. Two patients A and B whose body temperatures were 37.8^0c and 38^0c respectively were admitted at Koboko Health Centre III on a certain day. After two hours, patient A's temperature rose by 1.2^0c while B's temperature dropped by 1.4^0c. Workout the patients' temperature difference after the two hours. (05 Marks)

Temperature after 2 hours		Difference in temperature
Patient A	Patient B	Patient B
37.8^0c	$38.\overset{7}{0}^{10}0^0c$	$39.\overset{8}{0}^{10}0^0c$
$+ \ 1.2^0c$	$- \ 1.4^0c$	$- 36.6^0c$
39.0^0c	36.6^0c	2.4^0c

29. In the diagram below, line AB is parallel to line DE. ABC is an isosceles triangle and angle ABC $=40^0$. Study the diagram and use it to answer the questions that follow.



(a) Find the value of x in degrees. (02 Marks)

$$\begin{aligned} 2x + 2x + 40^0 &= 180^0 \\ 4x + 40^0 &= 180^0 \\ 4x + 40^0 - 40^0 &= 180^0 - 40^0 \\ 4x &= 140^0 \\ \frac{4x}{4} &= \frac{140^0}{4} \\ x &= 35^0 \end{aligned}$$

(b) Workout the size of angle BAC. (02 Marks)

$$\begin{aligned} \text{Angle BAC} &= 2x \\ &= 2 \times 35^0 \\ &= 70^0 \end{aligned}$$

30. The marks below were obtained by applicants during a job interview.

60, 40, 50, 60, 40, 50, 50, 60, 60, 40

(a) Complete the frequency distribution table below with the above marks. (04 Marks)

Marks	Frequency	Total marks
40	3	120
50	***3***	***150***
60	***4***	***240***

(b) Workout the applicants' average score. (02 Marks)

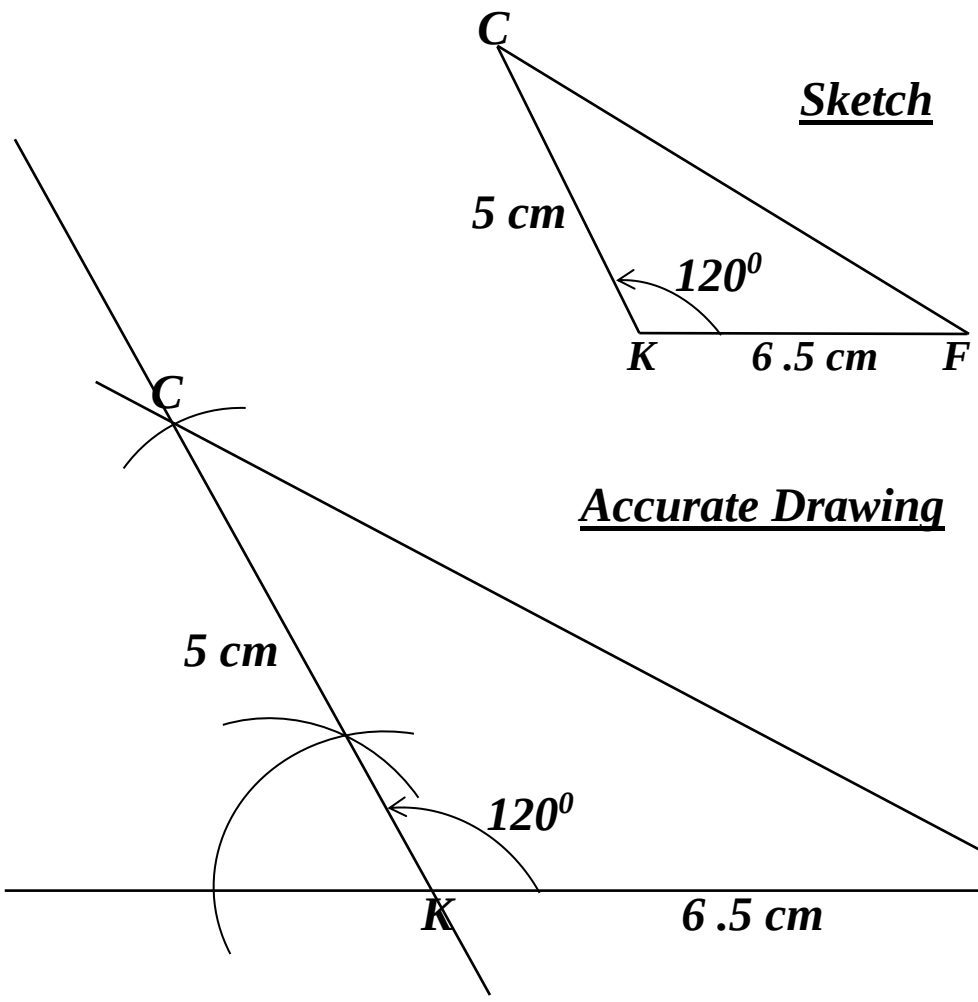
$$\textit{Average} = \frac{\textit{Total sum}}{\textit{Total number}}$$

$$= \frac{120 + 150 + 240}{3 + 3 + 4}$$

$$= \frac{510}{10}$$

$$= 51$$

31. (a) Using a ruler and a pair of compasses only, construct a triangle KFC where KF = 6.5cm, angle FKC =120^0 and length KC = 5cm. (04 Marks)

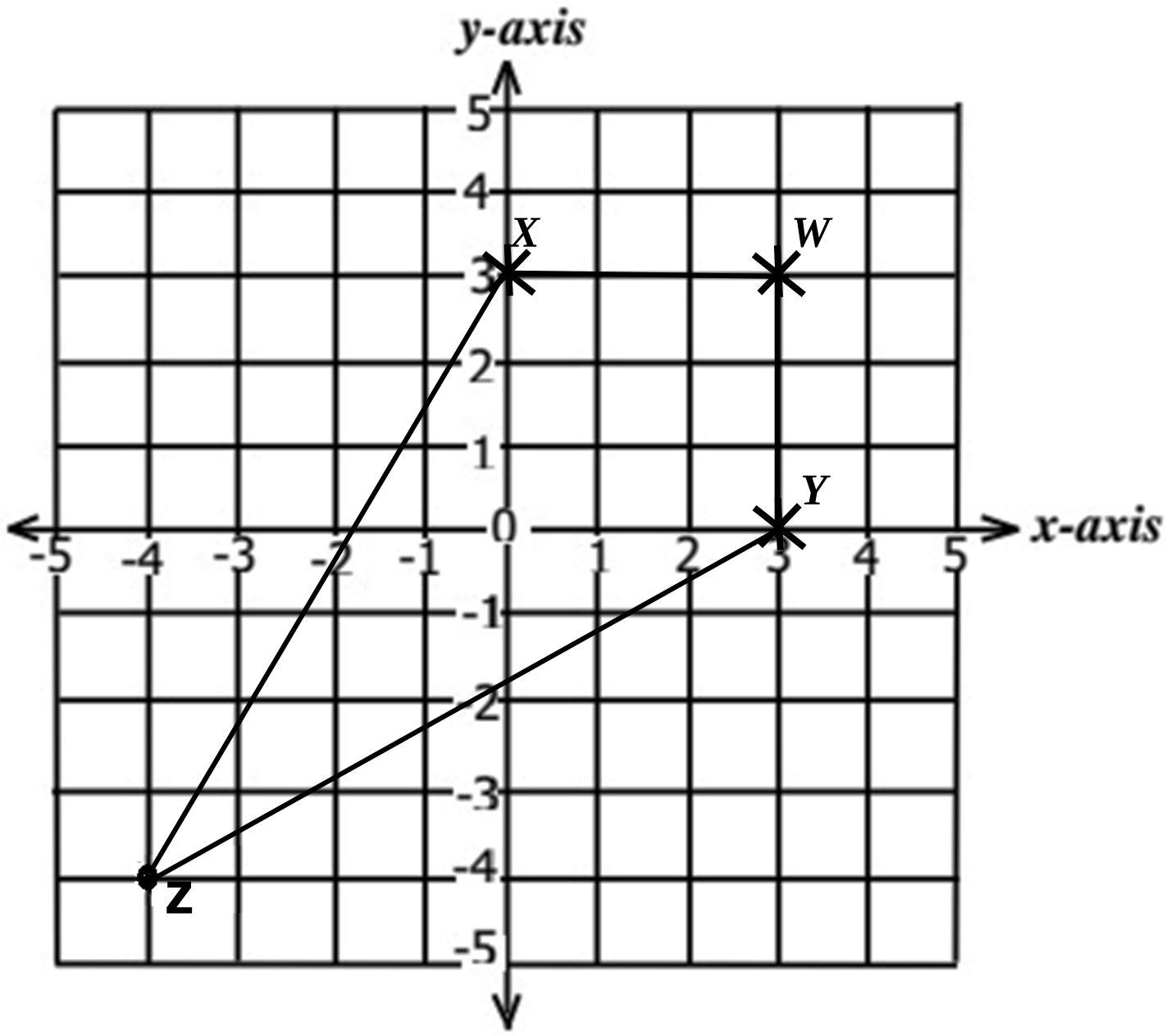


(b) Measure the length FC in centimetres. (01 Mark)

Length FC = ***9.9cm // 10 cm // 10. 1cm***

32. (a) On the grid below, plot the points; (03 Marks)

W($^{+}3$, $^{+}3$), **X**(0, $^{+}3$) and **Y**($^{+}3$, 0)



(b) Write down the coordinates for Point **Z.** (01 Mark)

Z ($^{-}4$, $^{-}4$)

(c) Join the points **Z** to **Y**, **X** to **W**, **Z** to **X** and **Y** to **W**. (01 Mark)

(d) Name the geometric shape **WXYZ** formed on the graph above. (01 Mark)

Kite