KAMPALA CAPITAL CITY AUTHORITY

DIRECTORATE OF EDUCATION AND SOCIAL SERVICES

PRIMARY SEVEN MOCK EXAMINATIONS 2022

MATHEMATICS

TIME ALLOWED: 2 HOURS 30 MINUTES

INDEX NO:	***EMIS No.***						***Personal No.***		

CANDIDATE'S NAME: ..... MARKING SCHEME .....

CANDIDATE'S SIGNATURE: .....

EMIS No: .....

DIVISION NAME: .....

Read the following instructions carefully.

1. This paper is made up of 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 in both sections **A** and **B**
5. ALL answers **MUST** be written in Blue or Black Ball - point pen or ink
6. Un-necessary changes in your work may lead to loss of marks.
7. All diagrams **MUST** be drawn in pencils.
8. Any handwriting that cannot be easily read may lead to loss of marks.
9. Do **not** fill any thing in the boxes shown ***"For Examiner's use only".***

FOR EXAMINERS' USE ONLY

QN. NO.	*MARKS*	*SIGN*
1 - 10		
11 - 20		
21 – 25		
26 - 30		
31 - 32		
TOTAL		

TURN OVER

SECTION A

1. **Workout:** 12 x 3

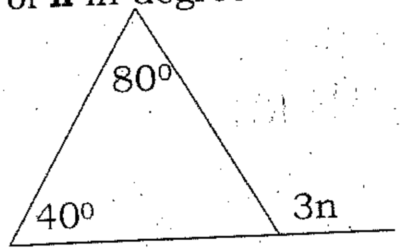
12 Or
x 3
36

2. **Subtract:** 203_{five}
$- \quad 14_{five}$

134 five

$5+3=8$
$8-4$

3. In the triangle below, find the value of **n** in degrees.



$3n = 40° + 80°$
$3n = 120°$
$\frac{3n}{3} = \frac{120°}{3}$
$n = 40°$

4. Given that **n = 3** and **m = -2**, evaluate $\frac{\mathbf{2n + m}}{\mathbf{n}}$

$\frac{(2 \times n) + m}{n}$
$\frac{(2 \times 3) + {}^{-}2}{3}$
$\frac{6 + {}^{-}2}{3}$
$\frac{6 - 2}{3}$

$\frac{4}{3}$
$1\frac{1}{3}$

5. If a dice is tossed once, what is the chance of picking a square number?

1, 2, 3, 4, 5, 6
S.C = {1, 4} Prob = 2/6
n(S.C) = 2
n(T.C) = 6
Prob = $\frac{n(S.C)}{n(T.C)}$

6. What number has been expanded to give;
$(7x10^3)+(6x10^1)+(8x10^{-1})+(4x10^{-2})$

$(7 \times 10 \times 10 \times 10) + (6 \times 10) + (8 \times 0.1) + (4 \times 0.01)$
$7000 + 60 + 0.8 + 0.04$
7000
60
0.8
+ 0.04
7060.84

7. Mary had **20** litres of liquid soap. She gave each child ½ litre. How many children did she give?

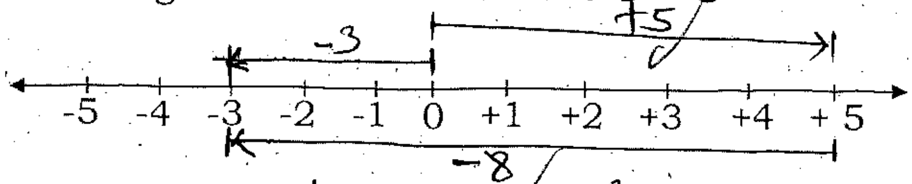
$20 \div \frac{1}{2}$
$20 \times \frac{2}{1}$
40 children

8. Find the median of the numbers.
8, 10, 4, 1, 6 and **9**

1, 4, (6, 8) 9, 10
$\frac{6+8}{2}$
$\frac{14}{2} = 7$

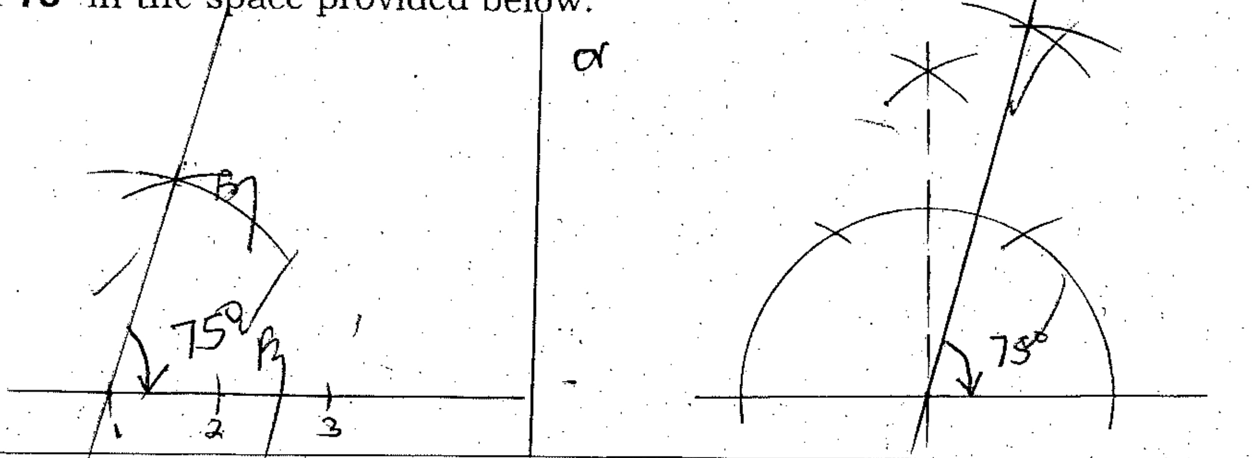
KCCA

9. Workout using the number line below. $^{-}3 - {}^{+}5$



$^{-}3 - {}^{+}5 = {}^{-}8$

10. Using a ruler, a pencil and a pair of compasses only, construct an angle of 75^0 in the space provided below.



11. At DFCU Bank, One US Dollar costs **Ug. Sh 3,600**. How much money in Uganda Shillings would one get from **1050 US Dollars**.

1 US$ costs Ug. sh. 3600.
US$ 1050 cost Ug. sh. 3600 × 1050

$$\begin{array}{r} 3600 \\ \times\ 1050 \\ \hline 0000 \\ +\ 180000 \\ 000000 \\ 3600000 \\ \hline 3780{,}000 \end{array}$$

Ug sh. 3780,000

12. Write **147** in Roman numerals.

= 100 + 40 + 7
C XL VII

= CXLVII

13. Peter got **2½%** in a Maths contest. What fraction of the work did Peter get?

$\frac{2\frac{1}{2}}{100}$

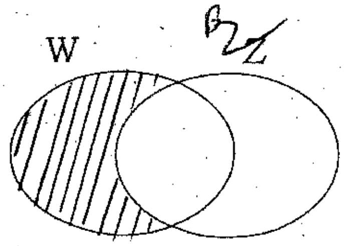
$\frac{5}{2} \div \frac{100}{1}$

$\frac{5}{2} \times \frac{1}{100}$

$\frac{5}{200}$

$\frac{1}{40}$

14. * In the Venn diagram below; Shade **Z'**.



12

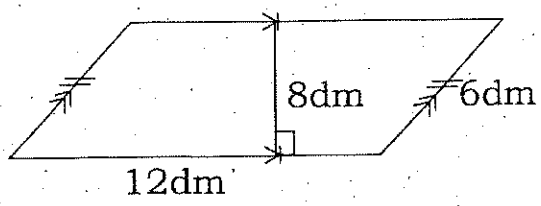
15. What angle is a complement of $(2x + 30)^0$?

$90^\circ - (2x + 30)^\circ$ M
$90^\circ - 2x^\circ - 30^\circ$
$90^\circ - 30^\circ - 2x^\circ$
$60^\circ - 2x^\circ$
$(60 - 2x)^\circ$

16. Solve the equation: $\frac{1}{2}p + 1 = 3$

$\frac{1}{2}p + 1 = 3$ M
$\frac{1}{2}p + 1 - 1 = 3 - 1$
$\frac{1}{2}p = 2$
$2 \times \frac{1}{2}p = 2 \times 2$
$p = 4$ A

17. Find the area of the Parallelogram below.



$A = B \times H$
$= 12dm \times 8dm$ M
$= 96\ dm^2$ A

12
×8
96

18. **Add:**

	Hrs	Min
	3	45
+	1	50
	5	35 h

95 ÷ 60 = 1 r 35

12

19. A pupil has $\frac{2}{3}$ of an orange. If she gave ¼ of it to her friend. What fraction of the orange did she remain with?

Fraction given out.
¼ of ⅔
$\frac{1}{4} \times \frac{2}{3}$
$\frac{2}{6}$ M
Fraction that remained
$\frac{2}{3} - \frac{1}{6}$ $\frac{4-1}{6}$

$\frac{3}{6}$ $\frac{1}{2}$ A

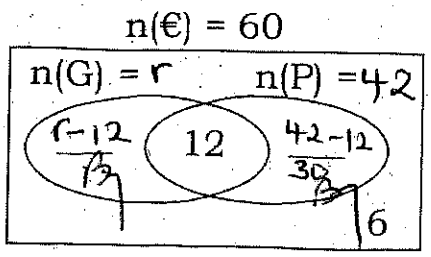
20. The two base angles of an isosceles triangle are: $(2x + 50)^0$ and $(4x + 20)^0$. Find the value of x

$(4x + 20)^\circ = (2x + 50)^\circ$
10 10
$4x + 20 = 2x + 50$ M
$4x - 2x = 50 - 20$
$2x = 30$
$\frac{2x}{2} = \frac{30}{2}$
$x = 15$ A

SECTION B

21. In a birthday party, **60** students were invited, **42** were served with popcorns (**P**), **r** were served with groundnuts (**G**), **6** did not take any and **12** were served with both eats.

a. Represent the above information in the Venn diagram below. *(2marks)*



b. How many students like ground nuts?

$r - 12 + 12 + 30 + 6 = 60$ M

$r + 36 - 36 = 60 - 36$

$r = 24$ A

24 students like ground nuts.

(2marks)

c. ~~Find the number of students who were served with one type of eats.~~

(2marks)

c. Find the number of students who were served with one type of eats. *(1mark)*

$(r - 12) + (42 - 12)$

$(24 - 12) + 30$

$12 + 30$ ✓ B

42.

22. **Complete the shopping bill table below.** A÷ qty A÷ u/c × *(6marks)*

ITEM	UNIT PRICE	QUANTITY	AMOUNT
Bread	sh. 3,500 per loaf	2 loaves	sh. 7000 B
Meat	sh. 10,000 per kg	½ kg	sh. 5,000
Rice	sh. 4000 per kg.	1½ kg	sh. 6,000
Sugar	sh. 3,000 per kg	1.5kg	sh. 4500 ✓ B
Milk	sh. 1200 per litre	2½ litres	sh. 3,000
Total expenditure			sh. 25500 ✓ B

Bread
Sh. 3500
× 2
Sh. 7000 ✓

Meat.
Sh. 5000
Sh. 10000
2
½ kg

Rice.
Sh. 6000 ÷ 3/2
Sh. 2000 × 3/2
Sh. 4000

Sugar.
3000 × 15/10
Sh. 4500 ✓

Total expenditure
Sh. 7000
Sh. 5000
Sh. 6000
Sh. 4500
Sh. 3000
Sh. 25500

10

23. Write **CDXLIX** in Hindu Arabic numerals.

CD XL IX

400 + 40 + 9

400
40
+ 9
449 B1

(2marks)

b. Find the sum of the place value of **4** and the value of **6** in the number: **435.16**

P.V 4 3 5 . 1 6

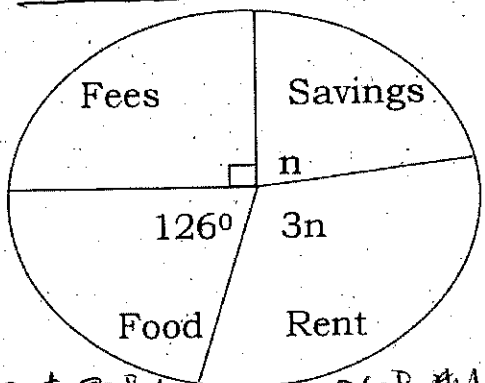
6 × 0.01
0.06 B1

4 → hundreds (100) B1

Sum:
100
+ 0.06
100.06 B1

(3marks)

24. The pie chart below shows how Mrs. Opio spends her monthly income. If she saves **sh. 120,000**, how much money does she earn per month?



126 + 90 = 216

5 10
360
216
144

3n + n + 90° + 126° = 360° M1
4n + 216° = 360°
4n + 216° − 216° = 360° − 216°
4n = 144°
4n/4 = 144°/4
n = 36° A1

36° → Sh. 120,000 M1
1° → Sh 120,000/36
360° → Sh. 120,000/36 × 360/1 M1
Sh. 120,000 × 10
Sh. 1,200,000 A1

(5marks)

25. a. **Simplify:** $\frac{0.12 \times 5.4}{0.03 \times 0.6}$

$\left(\frac{12}{100} \times \frac{54}{10}\right) \div \left(\frac{3}{100} \times \frac{6}{10}\right)$ M1

$\frac{4}{12} \times \frac{9}{54} \times \frac{100}{3} \times \frac{10}{6}$ M1

36 A1

(3marks)

b. Express **0.5454 ...** as a common fraction.

Let the fraction be n.

n = 0.5454... (eqn I)

100 × n = 0.5454... × 100

100n = 54.5454... (II) M1

eqn II − eqn I

100n = 54.5454...
− n = 0.5454...
99n = 54...

99n/99 = 54/99 = 6/11

n = 6/11 ∴ 6/11 A1

(2marks)

26. A bus left Kampala bus park at **8:30am** and reached Soroti at **1:00pm** a distance of **270km** apart.

a. How long did the bus take to reach Soroti ?

Hour : Min
60
1½ : 00
− 8 30
3 30 M

3 30
+ 1 00
4 30 A

or 4½ hours.

4Hours and 30minutes (2marks)

b. Calculate the speed of the bus in km/hr.

Speed = D/T
= 270Km / 4½h M
= 270Km ÷ 9h/2
270Km x 2/9h
= 60Km/h A (2marks)

27. a. Write **955** in Roman numerals.

955 = 900 + 50 + 5
= CM L V
= CMLV B (2marks)

b. Nashed has **496** goats on the farm. Round off the number of her goats to the nearest tens.

T O
4 9 6
+ 1 0
5 0 0 B

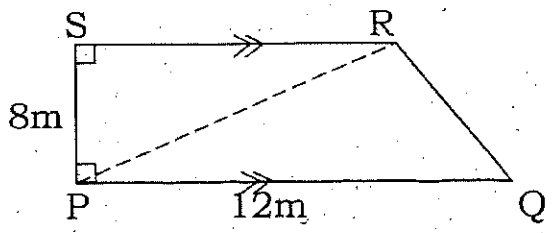
496 ≈ 500 (2mark)

c. **Workout:** 3 − 4 = p *(mod 5)* (2marks)

(3+5) − 4 = p (mod 5) M
8 − 4 = p (mod 5) A
p = 4 (mod 5) A

10

28. The area of the figure below is **72m²**.



a. Find the length of **SR**. *(3marks)*

$\frac{1}{2} \times (a+b) \times h = \text{Area}$

$\frac{1}{2} \times 8m \times (\overline{SR} + 12m) = 72m^2$ M

$\frac{4m \times (\overline{SR} + 12m)}{4m} = \frac{18}{\frac{72m^2}{4m}}$

$\overline{SR} + 12m = 18m$ ✓M

$\overline{SR} + 12m - 12m = 18m - 12m$

$\overline{SR} = 6m$. A

b. Workout the area of the triangle **RSP**. *(2marks)*

Area $= \frac{1}{2} \times b \times h$

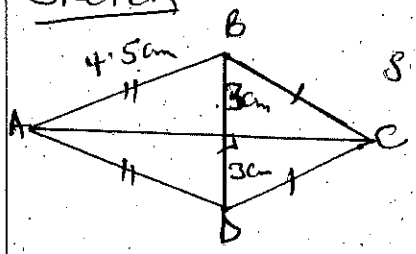
$= \frac{1}{2} \times 8m \times 6m$ M

$= 1 \times 4m \times 6m$

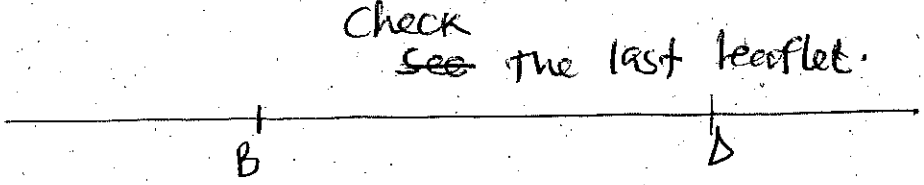
$= 24$ sq. metre. A

29. a. Using a pencil, a ruler and a pair of compasses only, construct a kite **ABCD** where diagonal **AC = 11cm**, **BD = 6cm** and line **AB = AD = 4.5cm**. *(4marks)*

Sketch.



Accurate diagram.



Check the last leaflet.

05

b. Measure length **BC** in cm. *(1mark)*

8·2 cm. ✓ B1

30. A man deposited **sh. 120,000** in a bank which gives 5% interest rate per month for four months.

a. Calculate the simple interest. *(3marks)*

S·I = P × T × R

= Sh. 120,000 × 4 × $\frac{5}{100}$ M1

= Sh. 1200 × 4 × 5 M1

= Sh. 1200 × 20

= Sh. 24000 A1

b. How much money will he have at the end of the period? *(2marks)*

Amount = P + S·I

= Sh. 120,000 M1

Sh. 24000

Sh. 144000 A1

31. Solve for **m**:

a. 2 (2m + 4) – 2 (m – 2) = 6 *(2marks)*

4m + 8 – 2m + 4 = 6 M1

4m – 2m + 8 + 4 = 6

2m + 12 – 12 = 6 – 12

2m = –6

$\frac{2m}{2} = \frac{-6}{2}$ | m = –3 A1

05

b. Nakiku is three times as old as her son Kiku. In **5** years time, their total age will be **46** years.
How old will Nakiku be in **8 years** time? *(3marks)*

Let Kiku's age be K

Time	Nakiku	Kiku	Total
now	3K	K	
5 years time	3K+5	K+5	46

3K+5+K+5 = 46 M
3K+K+10 = 46
4K+10-10 = 46-10
4K = 36

$\frac{4K}{4} = \frac{36}{4}$ M
K = 9 A

Nakiku's age in 8 years time
(3K)+8
(3×9)+8
27+8
35 years B

32. **Simplify:** $n^2 \times n$
a. $n^2 \times n^1$ or $n \times n \times n$ M
n^{2+1} M
n^3 B
n^3 A

(1mark)

b. $m^6 \div m^2$
m^{6-2} M
m^4 A
or $\frac{m \times m \times m \times m \times m \times m}{m \times m}$ M
$m \times m \times m \times m$
m^4 A

(2marks)

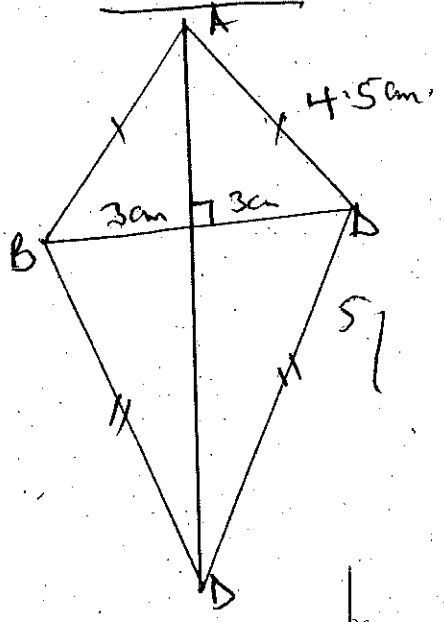
c. $\frac{a^2 \times a^5}{a^3}$
a^{2+5}
a^7
a^{7-3} M
a^4 A
or $\frac{a \times a \times a \times a \times a \times a \times a}{a \times a \times a}$ M
$a \times a \times a \times a$
a^4 A

(2marks)

8

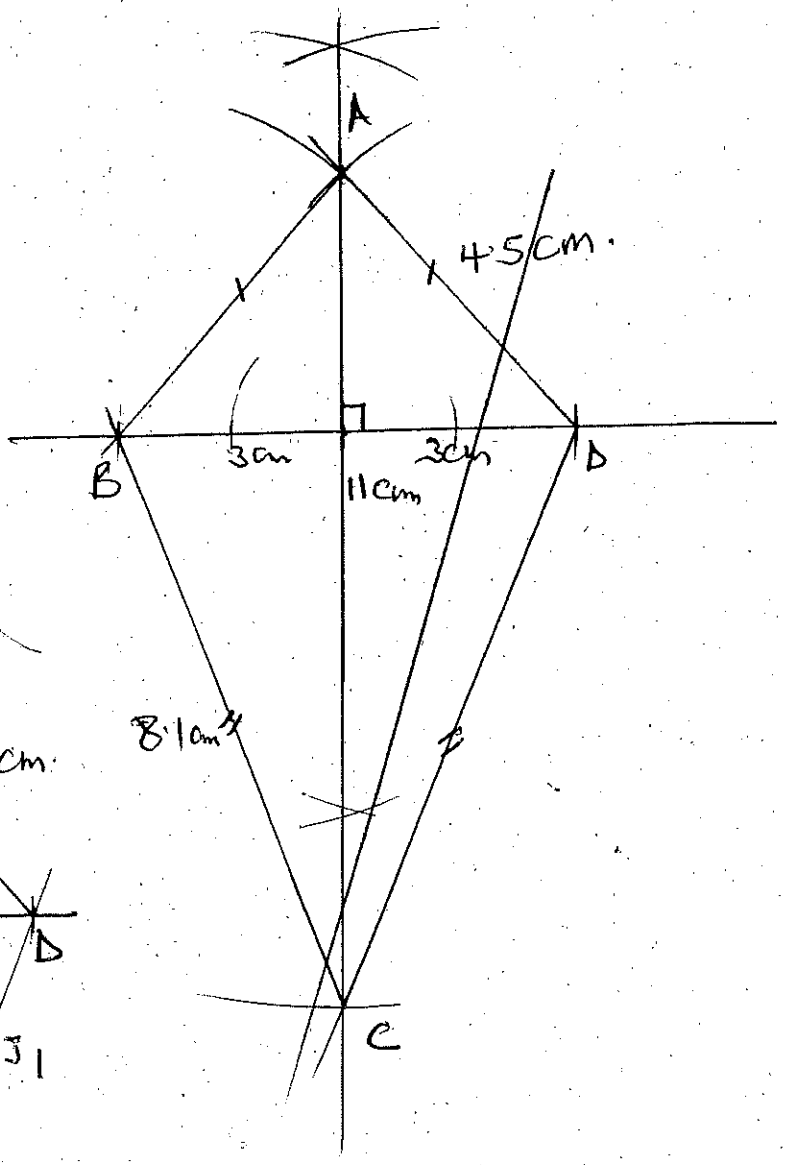
END

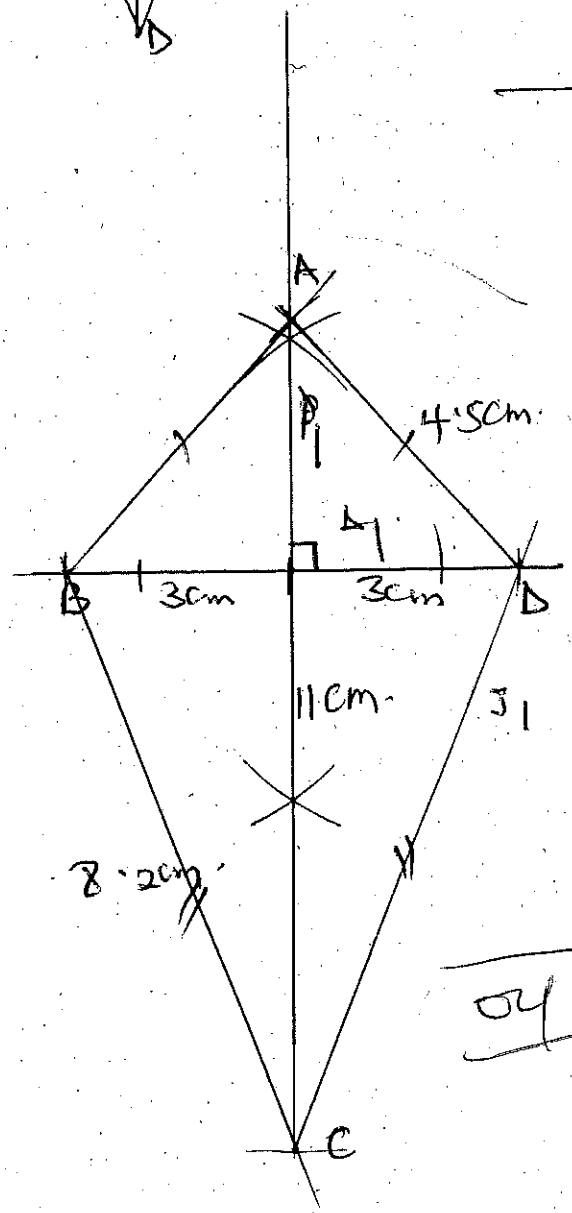
Sketch.



5

Accurate diagram.





04