GREENHILL SCHOOLS

JOINT PRE MOCK EXAMINATION 2024

CLASS : P.7

SUBJECT : MATHEMATICS

TIME ALLOWED : 2 HOURS 30 MINUTES

Name _____ Stream _____

Index No.: | | | | | | | | | | |

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

Read the following instructions carefully

For Examiner's use only	
A	
B	
TOTAL	

1. This paper has two Sections: A and B.
2. Section A has 20 answer questions (40 marks)
3. Section B has 12 questions (60 marks)
4. Answer ALL questions. Answers to both sections must be written in the spaces provided.
5. All answers must be written using blue ink. Diagrams should be drawn in pencil.
6. Unnecessary alteration of work may lead to loss of marks.
7. Any handwriting that cannot be easily read may lead to loss of marks.
8. Do not fill anything in the box indicated for examiner's use only.

SECTION A: (40 MARKS)

1. Workout: $\frac{3}{9} + \frac{2}{9}$

$$\frac{3+2}{9}$$

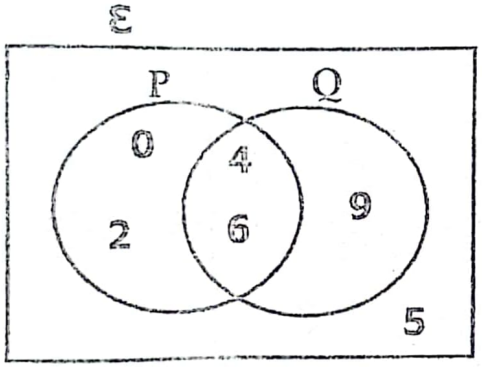
$$\frac{5}{9}$$

2. Write 606,045 in words.

Thousands	Units
606	045

Six hundred six thousand, forty-five

3. In the Venn diagram below, find $n(P \cap Q)'$



$(P \cap Q)' = \{0, 2, 5, 9\}$

$n(P \cap Q)' = 4$

4. Simplify: $6 - (-9)$

$6 + 9$

15

5. Express CLIV in Hindu – Arabic numerals.

C = 100

L = 50

IV = + 4

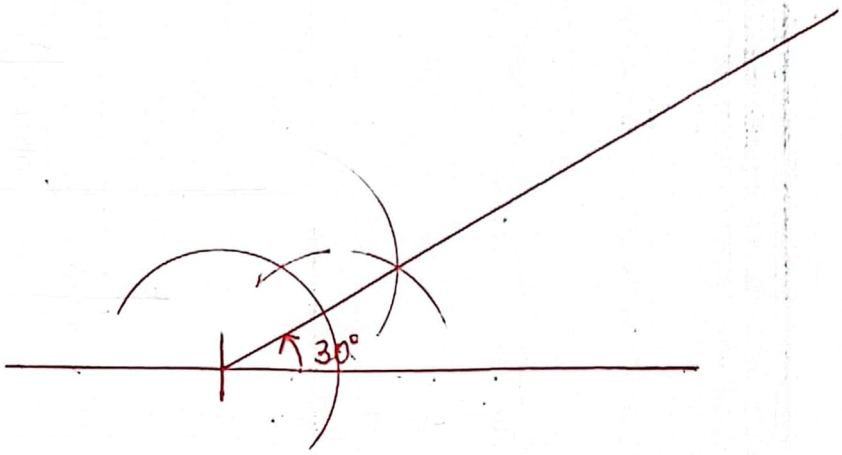
CLIV = 154

6. Find the next number in the sequence

81, 27, 9, 3, 1

÷3 ÷3 ÷3 ÷3

7. Using a ruler, a sharp pencil and a pair of compasses only, construct an angle of 30^0.



8. A trader bought a radio for sh. 80,000 and later sold it for sh. 100,000. Calculate his percentage profit.

BP SP

Profit = SP - BP

sh. 100 000
- sh. 80 000
sh. 20000

Percentage Profit = $\left\{\frac{\text{Profit}}{\text{BP}} \times 100\right\}\%$

$\left\{\frac{\text{sh. } 20000}{\text{sh. } 80000} \times 100\right\}\%$

25%

9. The average of 2y, 7 and y - 4 is 8. Find the value of y.

$\text{Average} = \frac{\text{Sum of all items}}{\text{No. of all items}}$

$8 = \frac{(2y + 7 + y - 4)}{3}$

$\frac{(2y + y + 7 - 4)}{3} = 8$

$\frac{(3y + 3)}{3} = 8$

$(3y + 3) = 8 \times 3$

$3y + 3 = 24$

$3y + 3 - 3 = 24 - 3$

$3y = 21$

$\frac{3y}{3} = \frac{21}{3}$

$y = 7$

10. A mathematics quick test ended at 3:47p.m. At what time did it end in 24hour clock system?

3 : 47
+ 12 00
15 47 Hours

11. Solve: $3k - 4 > 8$

$3K - 4 > 8$
$3K - 4 + 4 > 8 + 4$
$3K > 12$
$\frac{3K}{3_1} > \frac{12^4}{3_1}$
$K > 4$
$K = \{5, 6, 7, 8, 9 \ldots\}$

12. Workout: $4\overline{)2424}$

$$\begin{array}{r} 0606 \\ 4\overline{)2424} \\ -0\downarrow \\ \hline 24 \\ -24\downarrow \\ \hline 02 \\ -0\downarrow \\ \hline 24 \\ -24 \\ \hline 0 \end{array}$$

13. Express 750g as a fraction of a kg.

$\frac{750g}{1kg}$
$\frac{750g}{1000g}$

$\frac{750}{1000}$
$\frac{75}{100}\ \frac{15^3}{20_4}$

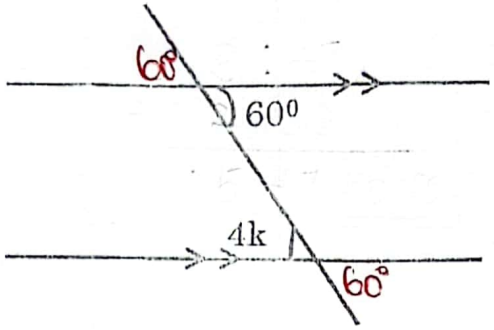
$\frac{3}{4}$

14. The ratio of girls to boys in a class is 5:2 respectively. If there are 20 boys, how many pupils are in the whole class?

Boys	Girls	Total
5	2	7
20		?

5 parts rep. 20
$\frac{5}{5_1}$ parts rep. $\frac{20^4}{5_1}$
1 part rep. 4
7 parts rep. (7 × 4)
28 pupils

15. Find the value of K in the figure below.



$4K = 60°$

$\frac{4K}{4} = \frac{60}{4}$

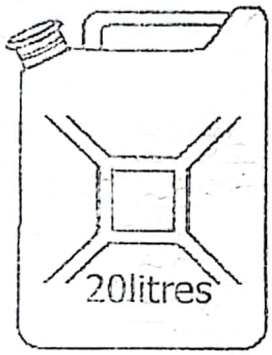
$K = 15°$

16. Simplify: $9m - 2n - 5m + 7n$

$9m - 5m + 7n - 2n$

$4m + 5n$

17. Calculate the capacity of the jerrycan below in millilitres.



Kl	Hl	Dl	l	dl	cl	ml
			1	0	0	0

$1\,l = 1000\,ml$

$20l = (20 \times 1000)ml$

$20{,}000ml$

18. Find the square of 36.

$36^2 = 36 \times 36$

$\begin{array}{r} 216 \\ +1080 \\ \hline 1296 \end{array}$

19. District A had 2,502,163 people and district B had 1,978,487 people in the concluded census in Uganda. Workout the range of the population in the two districts.

Range = Highest - Lowest

$\begin{array}{r} 2\,5\,0\,2\,1\,6\,3 \text{ people} \\ -\,1\,9\,7\,8\,4\,8\,7 \text{ people} \\ \hline 5\,2\,3\,6\,7\,6 \text{ people} \end{array}$

20. Given that V = {0,9,7}, find the number of proper subsets in set V.

No of Proper subsets $= (2^n) - 1$

$(2^3) - 1$

$(2 \times 2 \times 2) - 1$

$8 - 1$

7 proper subsets

SECTION B

21. (a) Express 1101_{two} as a base ten number. (2marks)

2^3	2^2	2^1	2^0
1	1	0	1

two

$(1 \times 2^3) + (1 \times 2^2) + (0 \times 2^1) + (1 \times 2^0)$

$(1 \times 2 \times 2 \times 2) + (1 \times 2 \times 2) + (0 \times 2) + (1 \times 1)$

$8 + 4 + 0 + 1$

13_{ten}

(b) Given that 23_n is equal to 19_{ten}, find the value of n (3marks)

n^1	n^0
2	3

$(2 \times n^1) + (3 \times n^0) = 19$

$(2 \times n) + (3 \times 1) = 19$

$2n + 3 = 19$

$2n + 3 - 3 = 19 - 3$

$2n = 16$

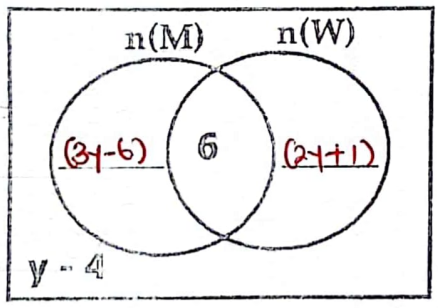
$\frac{2n}{2_1} = \frac{16^8}{2_1}$

$n = 8$

Base eight

22. In a class, 3y like mango juice (M), 2y+1 like watermelon juice (W) only, 6like both mango juice and watermelon juice while y – 4 like none of the two.

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



(b) If 21 pupils like watermelon juice, find the total number of pupils in the class. (3marks)

Watermelon = 21

$2y + 1 + 6 = 21$

$2y + 7 = 21$

$2y + 7 - 7 = 21 - 7$

$2y = 14$

$\frac{2y}{2_1} = \frac{14^7}{2_1}$

$y = 7$

Total number of pupils

$21 + 3y - 6 + y - 4$

$21 + (3 \times 7) - 6 + 7 - 4$

$21 + 21 - 6 + 7 - 4$

$21 + 21 + 7 - 6 - 4$

$49 - 10$

39 pupils

23. The sum of three consecutive odd numbers is 69. Find the numbers. (5marks)

Let the first number be x

1st	2nd	3rd	sum
x	x+2	x+4	69

1st	2nd	3rd
21	21+2	21+4
	23	25

$x+x+2+x+4 = 69$

$x+x+x+2+4 = 69$

$3x+2+4 = 69$

$3x+6-6 = 69-6$

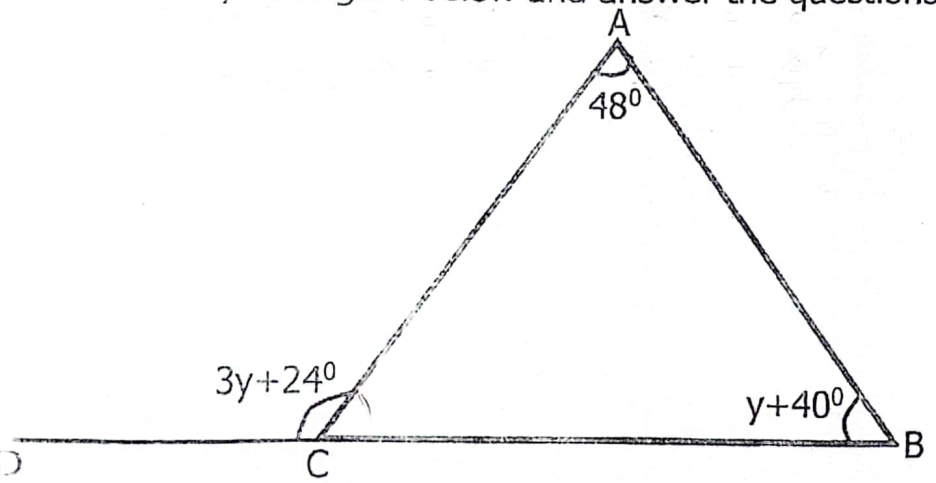
$3x = 63$

$\frac{3x}{3_1} = \frac{\cancel{63}^{21}}{\cancel{3}_1}$

$x = 21$

The numbers are 21, 23, 25

24. Study the figure below and answer the questions that follow.



(a) Find the value of y in degrees. (3marks)

$3y+24^\circ = y+40^\circ+48^\circ$

$3y+24^\circ = y+88^\circ$

$3y+24^\circ-24^\circ = y+88^\circ-24^\circ$

$3y = y+64^\circ$

$3y-y = y-y+64^\circ$

$2y = 64^\circ$

$\frac{2y}{2_1} = \frac{\cancel{64}^{32}{}^\circ}{\cancel{2}_1}$

$y = 32^\circ$

(b) Calculate the size of angle ACB. (2marks)

$180^\circ-(48^\circ+y+40^\circ)$

$180^\circ-(48^\circ+32^\circ+40^\circ)$

$180^\circ-(80^\circ+40^\circ)$

$180^\circ - 120^\circ = 60^\circ$

25. Mr. Lukooya shared books among his children Patrick, Deborah and Austin in the ratio of 3:2:7 respectively. Austin got 15 more books than Deborah.

(a) Find the total number of books Mr. Lukooya had. (3marks)

Patrick	Deborah	Austin	More
3	2	7	7−2 = 5 more
			15

5 parts rep. 15

1 part rep. 15/5 = 3

(3+2+7) parts rep. (12×3)

36 books

(b) How many books did Patrick get? (2marks)

(3×3) books

9 books

26. (a) Complete the table below. (5marks)

Quantity (÷)	Unit cost (÷)	Amount (×)
2kg of rice	Sh. 4000 per kg	Sh. 8000
3 loaves of bread	Sh. 5500 per loaf	Sh. 16500
1½ kg of sugar	Sh. 3600 per kg	Sh. 5400
250g of salt	Sh. 2000 a kg	Sh. 500
Total expenditure		Sh. 30400

Rice: sh. 4000 × 2 = sh. 8000

Bread: sh. 16500 / 3 = sh. 5500

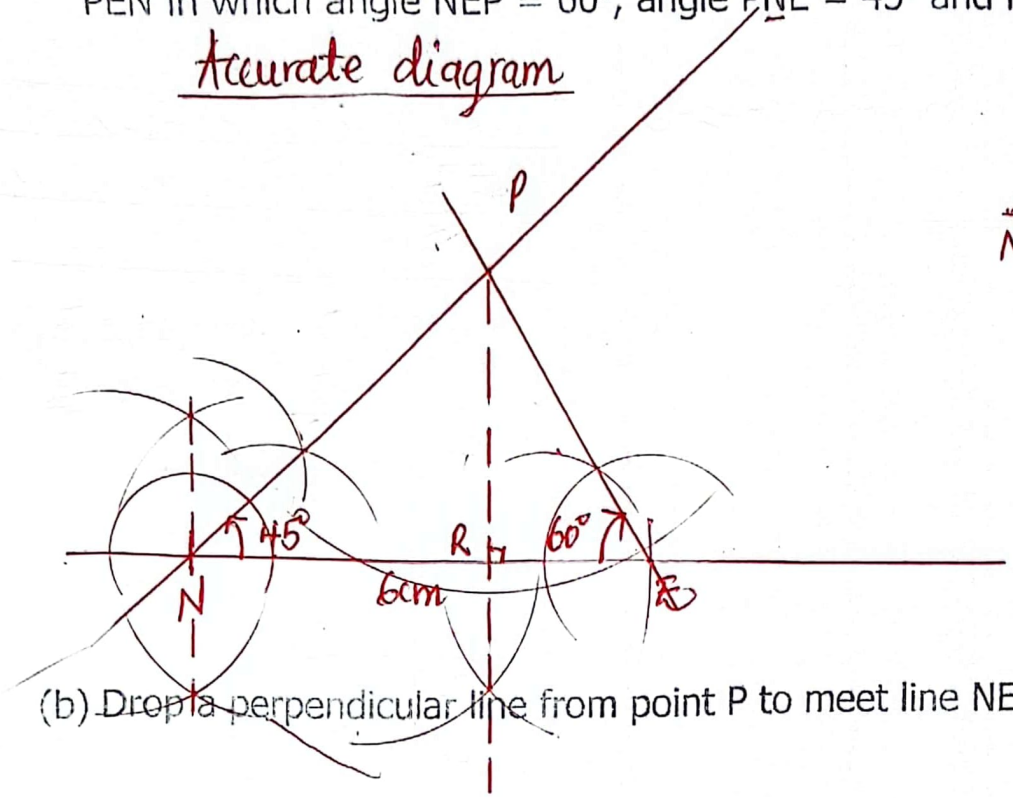
Sugar: sh. 5400 / 12 = 4 → 6 3 → ½ 2 → 1½

Salt: sh. 2000 × ½ = sh. 500

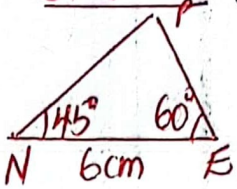
Total: sh. 16 500 + sh. 8 000 + sh. 5400 + sh. 500 = sh. 30400

27. (a) Using a ruler, a pencil and a pair of compasses only, construct a triangle PEN in which angle NEP = 60^0, angle PNE = 45^0 and line NE = 6cm. (4marks)

Accurate diagram



Sketch



(b) Drop a perpendicular line from point P to meet line NE at R. (1mark)

28. The total distance round a circle is 88m.

(a) Calculate the diameter of the circle. (2marks)

$C = \pi d$

$88m = \frac{22}{7} d$

$7 \times 22 d = (88 \times 7)m$

$22d = (88 \times 7)m$

$\frac{22d}{22} = \frac{(88 \times 7)m}{22}$

$d = 28m$

(b) Find its area. (3marks)

$Area = \pi r^2$

$\pi \times r \times r$

$\frac{22}{7} \times 28m \times 28m$

$22m \times 28m$

$22m \times 28m$

176

+440

$616m^2$

29. Siima is thrice the age of Sarah who is 3k years old and Andrew is 10 years younger than Siima. Their total age is 74 years.

(a) Workout the value of k. (4marks)

Sarah	Siima	Andrew	Total
3K	3X3K 9K	9K-10	74

$3K+9K+9K-10 = 74$

$21K-10 = 74$

$21K-10+10 = 74+10$

$21K = 84$

$\frac{21K}{21_1} = \frac{84^4}{21_1}$

$K = 4$

(b) How old is Andrew? (1mark)

$9K-10$

$\{(9X4)-10\}$ years

$(36-10)$ years

26 years

30. The travel time table below shows how YY bus travels from Kampala to Mbale.

Town	Arrival time	Departure time
Kampala		6:15a.m
Namawojjolo	7:45a.m	8:00a.m
Jinja	9:00a.m	9:30a.m
Mbale	11:15a.m	

(a) For how long did the bus stay at Namawojjolo? (2marks)

$8^{60}:00$

$-7:45$

15 minutes

(b) In which town was that bus at 9:11a.m? (1mark)

Jinja

(c) If the distance from Kampala to Mbale is 235km, calculate the average speed of the bus for the entire journey. (2marks)

Time taken

11:15
- 6:15
5:00

5 hours

Average speed

As. = Distance covered / Time taken.

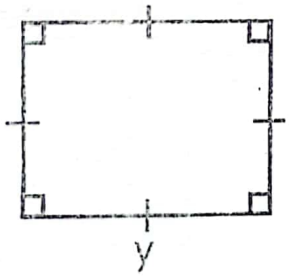
$\frac{235\ km}{5\ h}$ = 47 km/h

31. (a) Prime factorise 72 and write its prime factors in power form. (2marks)

2	72
2	36
2	18
3	9
3	3
	1

$72 = 2^3 \times 3^2$

(b) The area of the figure below is 64cm². (3marks)



Find the value of y.

Area = s × s

$64cm^2 = s^2$

$\sqrt{y^2} = \sqrt{64cm^2}$

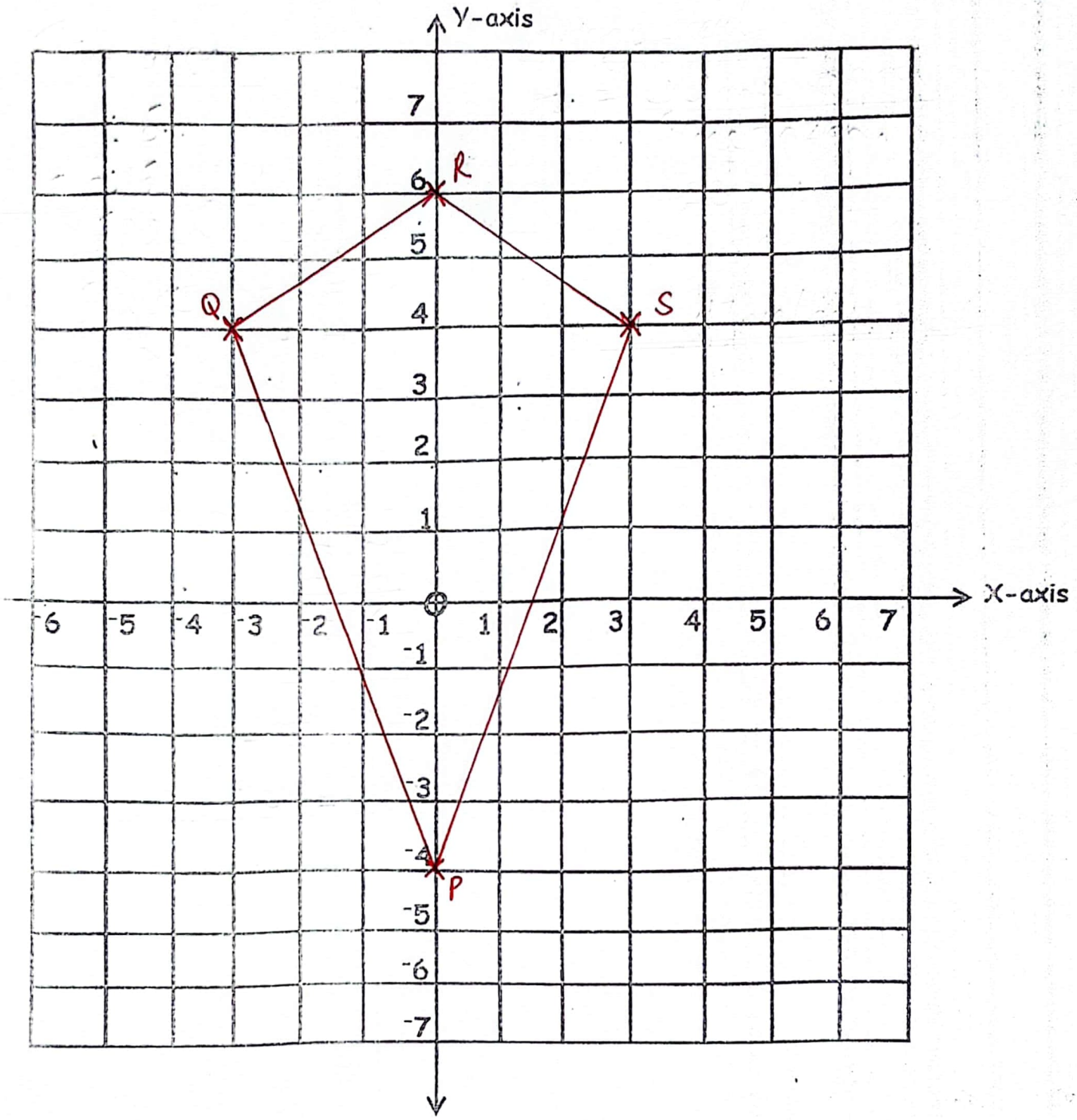
$y = (2 \times 2 \times 2)cm$

$y = 8cm$

2	64
2	32
2	16
2	8
2	4
2	2
	1

32. (a) Plot these points on the graph below.

P(0,-4), Q(-3,4), R(0,6) and S(3,4). (4marks)



(b) Join P to Q, Q to R , R to S, S to P and name the shape formed. (1mark)

Kite