BROAD EXAMINATIONS©

PRIMARY LEAVING SPECIAL EXAM

2024

MATHEMATICS

Time allowed: 2 hours 30 minutes.

Random No.						Personal No.		

Karyarya
0783341980

Candidate's Name: Marking guide

Candidate's Signature.....

School 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 the space provided in blue or black ball point pens and ink. **Only diagrams should be done in pencil.**
6. Unnecessary crossing of answers will lead to loss of marks
7. Any handwriting, which cannot be easily read, may lead to loss of marks.
8. Do **not** fill anything in the boxes indicated for Examiners' use only.

FOR EXAMINER'S USE ONLY	
QN.	MARKS SIGN
1-5	
6-10	
11-15	
16-20	
21-22	
23-24	
25-26	
27-28	
29-30	
31-32	
TOTAL	

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SECTION .A. (40 Marks)

1. Work out: 1 2
   x 4

K P.2

4 8 ✓ B_2

B_2 on sight of 48

2. Express CXLIV in Hindu Arabic numerals.

C P.6

CXLIV → C XL IV

100+40+4

144 ✓ B_2 on sight of 144

C = 100
XL = 40
IV = + 4
144

3. Find the square of 16.

C P.5

$16^2 = 16$
x 16
96
+16
256

$(16)^2 = 16$ ✓ m_1
x 16
96
+16
256 ✓ A_1

m_1 for 16x16

A_1 for 256

4. Solve: m + 5 = 18

C P.5

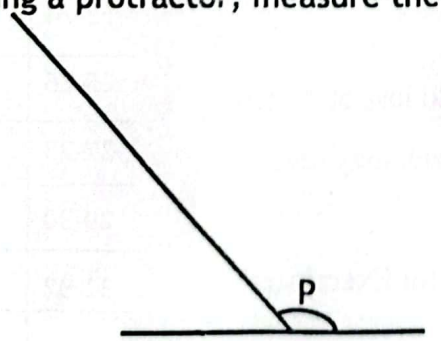
m+5 = 18
m+5-5 = 18-5 m_1
m + 0 = 18-5
m = 13 A_1

m_1 for subtracting 5 from 18

A_1 for m = 13

5. Using a protractor, measure the angle marked P in the diagram.

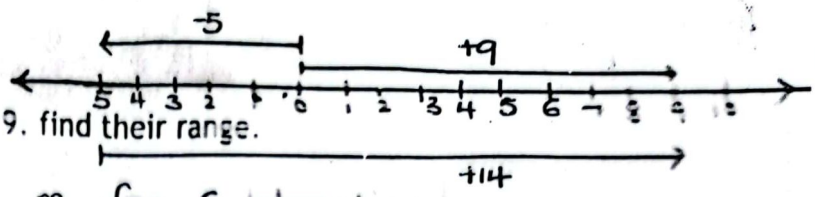
A P.5



P = 132° or 133° B_2

B_2 for 132° or 133° with degrees

6. Given the integers ⁻4, 0, ⁻5 and ⁻9. find their range.



C P.5

Range = H − L

+9 − (−5) m_1

+9 + 5

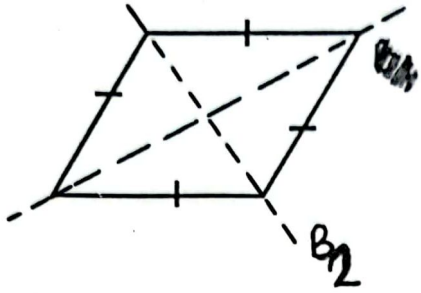
+14 A_1

m_1 for Subtraction

A_1 for 14

7. Show all the lines of folding symmetry of the figure below.

C P.5



B_2 for correct lines of folding symmetry

8. Add: Litres millilitres

C P.4

Litres	millilitres
4+1	720
+ 3	630
8	350

B_2 on sight of 8l 350ml

9. Subtract: 3k - 4 from 7.

C P.6

7 − (3k − 4) m_1

7 − 3k + 4

7 + 4 − 3k

11 − 3k A_1

m_1 for subtracting with brackets

A_1 for 11−3k

10. Find the additive inverse of ⁻5.

C P.5

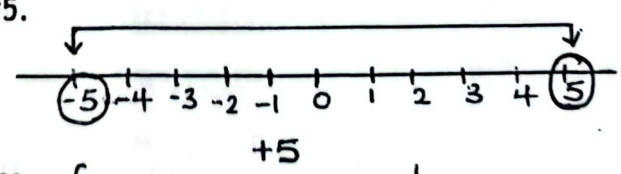
m + (−5) = 0 m_1

m − 5 = 0

m − 5 + 5 = 0 + 5

m + 0 = +5

m = +5 A_1



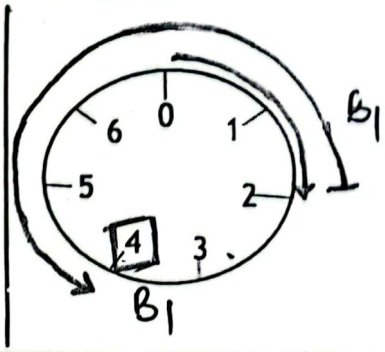
m_1 for correct method

A_1 for +5

11. Use the dial below to work out:

2 - 5 = ___ (mod.7)

C P.7



B_1 for correct arrows.

B_1 for 4.

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12. A motorist still had 42km to cover after covering $\frac{2}{5}$ of his journey. How long was his journey?

A P.6

$\frac{5}{5} - \frac{2}{5} = \frac{5-2}{5}$

$= \frac{3}{5}$ ✓

3 parts rep. 42 km

1 part rep. $\frac{42\text{km}}{3}$

5 parts rep. $\frac{\cancel{42}^{14}}{\cancel{3}_{1}}$ km × 5 m_1

14 km × 5

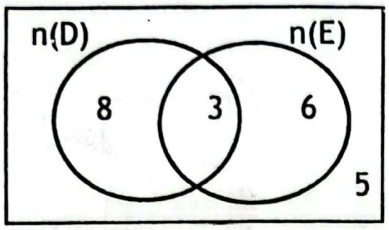
70 km A_1

M_1 for correct method

A_1 for 70 km

13. The diagram below shows the number of elements in sets D and E. Study and use it to answer the questions that follow.

C P.6



Find n(D∪E).

$n(D \cup E) = 8 + 3 + 6$ m_1

$= 17$ A_1

m_1 for identifying union.

A_1 for 17

14. The time is "a quarter to noon". Express this time in 24 - hour clock system.

C P7

A quarter to noon ⇒ 11:45 am

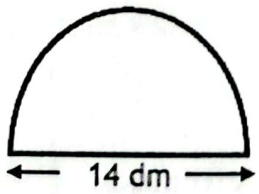
11: 45 am
+ 00 00 hours
11 45 hours B_2

Accept 11:45 am = 1145 hours

B_2 for 1145 hours.

15. Calculate the circumference of the figure below. ($\pi = \frac{22}{7}$)

C P6



$C = \frac{1}{2}\pi D$

$= \frac{1}{\cancel{2}_{1}} \times \frac{\cancel{22}^{11}}{\cancel{7}_{1}} \times \cancel{14}^{2}$ dm m_1

$= 22$ dm A_1

m_1 for correct substitution

A_1 for 22 dm.

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16. Multiply: $110_{two} \times 11_{two}$

C P.7

$$\begin{array}{r} 110_{two} \\ \times\ 11_{two} \\ \hline 110 \\ +110\ \ m_1 \\ \hline 10010_{two}\ A_1 \end{array}$$

M_1 for multiplication and addition.

A_1 for 10010_{two}

17. The pictograph below shows the number of people that Sarah served lunch in her restaurant on Monday.

Given that represents 6 males and represents 8 females, how many people did Sarah serve lunch that day?

C P.4

4×6 ✓
$= 24$ males

2×8 ✓
16 females

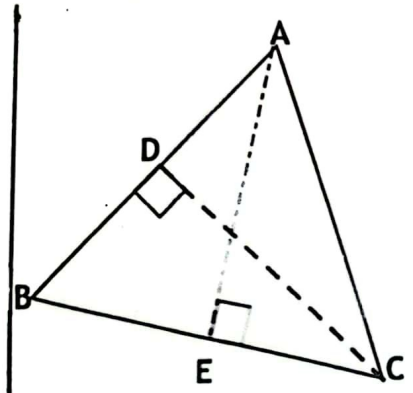
$$\begin{array}{r} 24\ m_1 \\ +16 \\ \hline 40\ \text{people}\ A_1 \end{array}$$

Accept
$(4 \times 6) + (2 \times 8)$
$24 + 16$ m_1
40 people A_1

M_1 for addition
A_1 for 40 people

18. In the diagram below, $\overline{AB} = 12m$, $\overline{AE} = 8m$ and $\overline{CD} = 6m$.

Calculate the area of triangle ABC.



C P.6

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

$= \frac{1}{\cancel{2}_1} \times \cancel{12}^{6}m \times 6m$ m_1

$= 6m \times 6m$

$= 36m^2$ A_1

M_1 for correct substitution

A_1 for $36m^2$

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19. How many groups of hundreds represent the value of 5 in the numeral 75834?

C P4

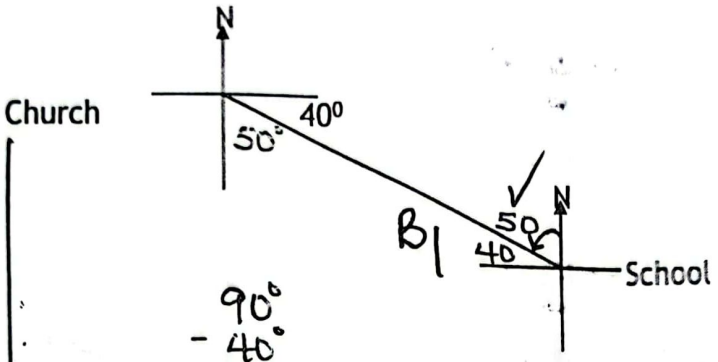
TTh Th H T O
7 5 8 3 4
↓ 5×1000
5000 ✓

$\frac{5000}{100}$ M1 For division

50 A1 For 50.

20. In the diagram below, find the direction of the church from the school.

A P7



B1

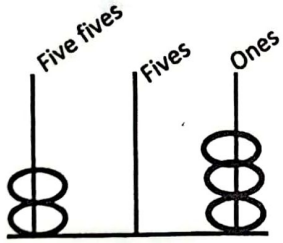
90°
− 40°
50°

N50°W B1

B1 for 50° on a diagram.
B1 for N50°W. in a right position.

SECTION .B. (60 MARKS)

21. Study the abacus below and answer questions about it.



(a) Write the number shown on the abacus above.

C P.5

203_{five} B2

B2 for 203_{five}
emphasize the base.

(02 Marks)

(b) Express the above number in base ten.

ff f o
203_{five}

$(2\times5\times5)+(0\times5)+(3\times1)$ M1
$50 + 0 + 3$ M1
53_{ten} A1

M1 for expanding
M1 for adding
A1 for 53

(03 Marks)

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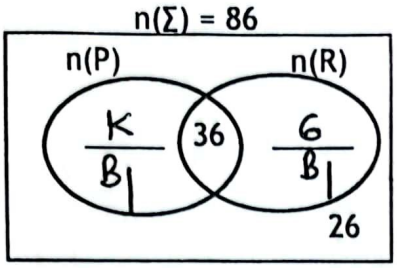
22. In a class of 86 candidates, k like posho (P) only, 6 like rice (R) only, 36 like both posho and rice while 26 candidates do not like any of the two food stuffs.

(a) Complete the Venn diagram below using the above information. (02 Marks)

A
P.6



B1 for correct entry of K
B1 for correct entry of 6.

(b) Find the value of k.

K+36+6+26 = 86 M1
K+ 68 = 86
K+ 68-68 = 86-68
K + 0 = 18
K = 18 A1

M1 for correct equation
A1 for 18. (02 Marks)

(c) How many candidates like either posho or rice?

18+36+6 M1
60 candidates A1

M1 for adding
A1 for 60.

(02 Marks)

23. A milk can weighs 64 kg when full of milk. If the empty can weighs 4kg, what is the weight of the can when $\frac{2}{3}$ full of milk?

C
P.6

Weight of the milk
64kg - 4kg = 60kg ✓B1

$\frac{2}{3} \times 60$kg
= 40kg B1

40kg
+4
44kg M1
A1

B1 for 60kg.
B1 for 40kg.
M1 for addition
A1 for 44kg. (04 Marks)

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24. Daniel went to a wholesale shop and bought items as shown below to take to his retail shop.

- packet of 50 bic pens at sh. 24000.
- 5 litre jerrycan of cooking oil at sh. 25000
- sack of 50kg of sugar for sh. 180,000

(a) If Daniel sold each pen at sh. 600, how much profit did he get after selling all pens in the packet?

P.6 C

sh. 600 × 50
sh. 30000 B_1

sh. 30000
− sh 24000
sh. 6000 B_1

B_1 for selling price
B_1 for profit

(02 Marks)

(b) At what price must he sell each kilogram of sugar in order to make a profit of 20%?

100% + 20%
120%

$\frac{120}{100}$ × sh. 180000
= sh. 1800 × 120

sh. 216000 B_1

sh. $\frac{216000}{50}$ M_1

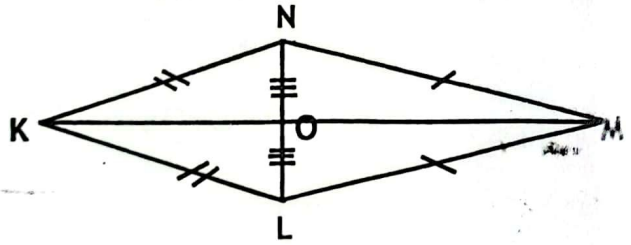
sh. 4320 A_1 A_1

B_1 for sp of 50kg of sugar.
M_1 for division.

(03 Marks)

25. In the diagram below, length LN = 16m, length KO = 7m and the area of the Kite KLMN is 160m². Study and use it to answer questions that follow.

P.7 C



Area of KLN
$A = \frac{1}{2} \times b \times h$
$\frac{1}{2} \times 8m \times 7m$
= 8m × 7m
= 56m² ✓
B_1

Area LMN
160m²
− 56m²
104m² ✓ B_1

Combined method award B_1 B_1 B_1 on sight of 56, 104 and 13 m.

(03 Marks)

(a) Find the length OM.

$\frac{1}{2} \times b \times h = A$
$\frac{1}{2} \times 16 \times h = 104$
$\frac{8h}{8} = \frac{104}{8}$
h = 13m B_1

(b) Work out the area of triangle LMN.

$A = \frac{B \times H}{2}$
$= \frac{16m \times 13m}{2}$
= 8m × 13m

104m² A_1

Accept a learner who carries 104m² directly from part (a).

Emphasize units

(02 Marks)

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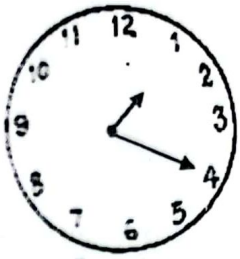
26. The clock faces below show the departure and arrival time of a taxi from town A to town B on a certain day.

Departure from A

(Morning)

Arrival at B



(Evening)

(a) At what time did the taxi:

(i) leave town A?

C P.6

10:50 am B_1 emphasize units
1050 hours

(01 Mark)

(ii) reach town B?

1:20 pm B_1 emphasize units.
1320 hours.

(01 Mark)

(b) If town B is 60 km from town A, calculate the average speed of the taxi.

12:00 noon
− 10:50
1 : 10

1:10
+ 120
2:30 = $2\frac{1}{2}$ hrs B_1

As = D ÷ T
$60 \div \frac{5}{2}$ M_1
$\cancel{60}^{12} \times \frac{2}{\cancel{5}}$
12 × 2
24 km/h A_1

B_1 for duratic
M_1 for substit
03
~~02~~ Marks)

A_1 for 24k

27. (a) Solve the inequality: 3 - 2y ≤ y + 12.

C P.7

$3 - 2y \leq y + 12$
$3 - 3 - 2y \leq y + 12 - 3$
$-2y \leq y + 9$
$-2y - y \leq y - y + 9$
$-3y \leq 9$ M_1

$\frac{-3y}{-3} \geq \frac{9}{-3}$ M_1
$y \geq -3$ A_1

M_1 on the last collection of like terms
M_1 on dividing by negative & changing sign.
A_1 for $y \geq -3$.

(03 Marks)

(b) Given that y is a negative integer, find the values of y.

$y = \{-3, -2, -1\}$ B_2

(02 Marks)

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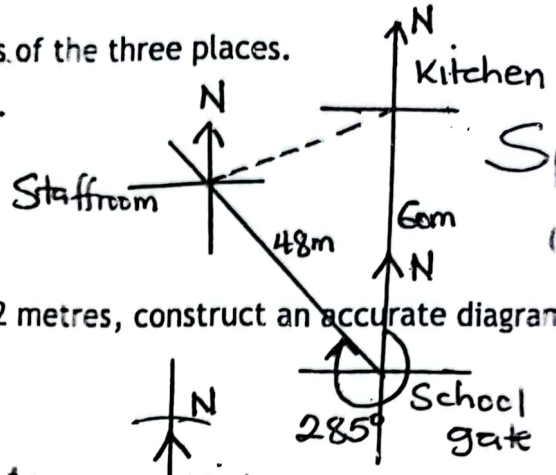
28.(32. A school gate is 60 metres South of the Kitchen and the staffroom is 48 metres from the gate on a bearing of 285°.

(a) Draw a sketch to show the positions of the three places.

p. C S_1 for indicating places, sketch distances, true North and 285°



S_1

(01 Mark)

(b) Using a scale of 1cm to represent 12 metres, construct an accurate diagram to show the above information.

(b)

Distance from Kitchen to gate

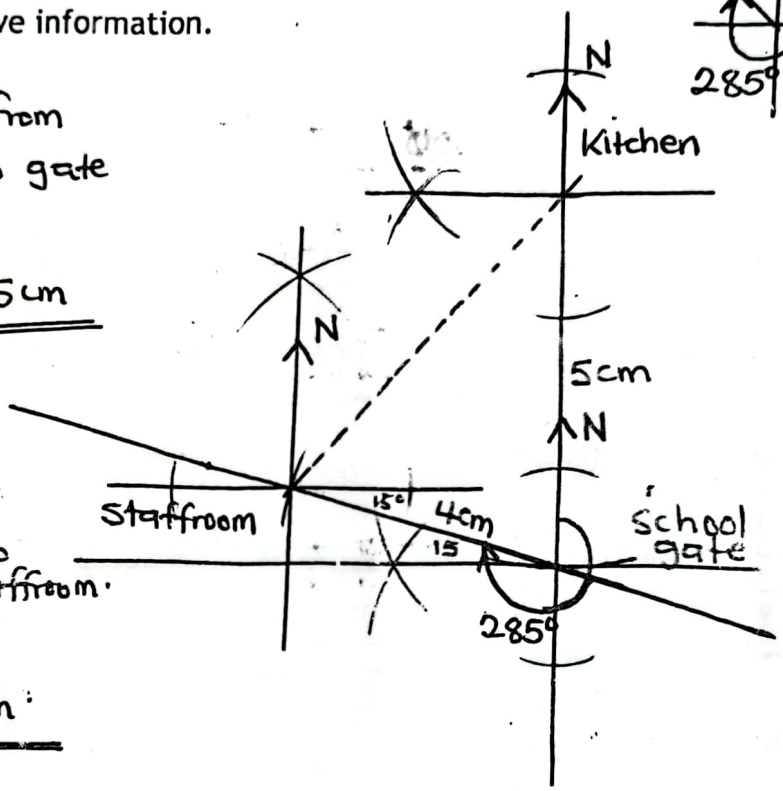
1cm : 12m

$\frac{60m}{12m} = 5cm$

Distance from School gate to Staffroom.

29 1cm : 12m

$\frac{48m}{12m} = 4cm$



(03 Marks)

(c) Find the bearing of the kitchen from the staffroom.

F

045°

(01 Mark)

END

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