

CENTURY PRIMARY EDUCARE CONSULT



PRIMARY SEVEN EXAMINATIONS-2023

PRIMARY LEAVING PRE MOCK SET II

MATHEMATICS

Time allowed: 2 hours 30 minutes

INDEX NO.

Candidate's Name: _____

Candidates Signature: _____

District : _____

Read the following instructions carefully:

1. The paper has two sections: A and B
2. Section A has 20 short questions (40 marks)
3. Section B has 12 questions (60 marks)
4. Answer ALL questions. All answers to both Sections A and B must be written in the spaces provided.
5. All answers must be written using a blue or black ball point pen or 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 boxes indicated for Examiner's use only.

FOR EXAMINER'S USE ONLY

Qn. No	MARKS	SIGN
1 - 5		
6 - 10		
11 - 15		
16 - 20		
21 - 22		
23 - 24		
25 - 26		
27 - 28		
29 - 30		
31 - 32		
TOTAL		

Please turn over

SECTION A

1. Work out: 4 3 2

$$\begin{array}{r} \times 2 \\ \hline \end{array}$$

2. Write LXXIV in Hindu Arabic numbers.

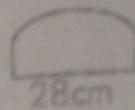
3. Work out: $\frac{7}{8} - \frac{3}{8}$.

4. Find the next number in the sequence.

1, 8, 27, 64, ____.

5. Work out: $4+5$ (Finite 7)

6. Find the area of shape shown below. (use $\pi = \frac{22}{7}$)

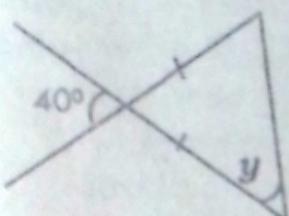


7. Given that $P=3$ and $q=2$. Find the value of $q^2 - 2P$.

8. A mathematics discussion started at 10:30am and lasted for $5\frac{2}{3}$ hours. At what time did it end?

9. Multiply: $21_{\text{three}} \times 11_{\text{three}}$

10. In the diagram below, find the size of angle y in degrees.



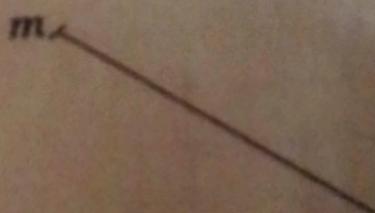
11. Find the highest number of classroom that can be occupied by either 48 or 60 pupils leaving no remainder

12. Set V has 32 subsets. How many elements does set V have?

13. How many 250ml bottles of juice can be filled from a 12 litre container?

14. Gloria has a bundle of five thousand shilling notes numbered consecutively from AD 534201 to AD 534300. How much money does she have?

15. Using a ruler, a pencil and a pair of compasses only, construct an angle of 30° at point M .



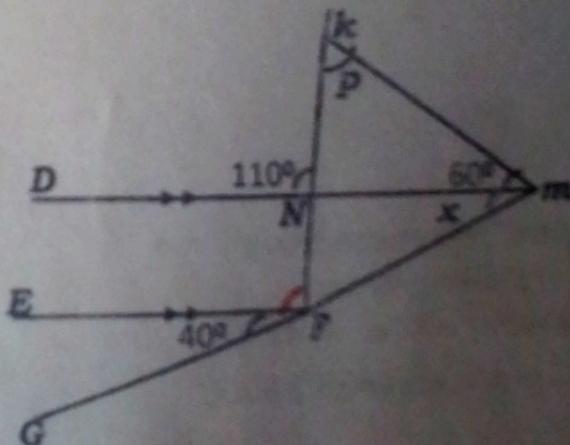
16. Simplify: $+5 - +11$.

22. (a). Solve: $3(y-3) - (y-5) = 2$
(02mrks)

24. (a). What angle is four times its supplement? (03mrks)

(b). Solve: $k - \frac{36}{k} = 0$ (03mrks)

(b). In the diagram below line DM is parallel to line EF angle $DNK = 110^\circ$ and angle $EFG = 40^\circ$.



(a). Find the size of angle P and x in degrees.
(i). P (01mrk)

(ii). x (02mrks)

(b). Simplify: $(2\frac{1}{2} \times 1\frac{1}{4}) \div (2\frac{1}{2} + 1\frac{1}{4})$
(03mrks)

25. Write 0.467 in standard form.
(02mrks).

(b). Find the cost of a kilogram of meat. (02mrks)

(b). Express 36 as a product of its prime factors. (02mrks)

27. In a school of 640 pupils, 55% are girls and the rest are boys.
(a). How many boys are there?
(02mrks);

26. Mr. Muhumuza bought the following items:

3 litres of milk at sh 4200
 $2\frac{1}{2}$ kg of meat at sh 35000

750g of sugar at sh 6000 per kg
(a). How much money did he spend altogether? (03mrks)

(b). Given that $\frac{7}{11}$ of the girls and $\frac{7}{12}$ of the boys are boarders, how many boarders are there?
(4mrks)

28. The height of the cylindrical tank whose radius is 70cm is 150cm. Calculate its capacity (use π as $\frac{22}{7}$)
(04mrks)

(b). Find the average speed of the car driver. (02mrks)

29. A bus driver covered a distance of 90km at a speed of 60km/hr.

A car driver covered the same ~~in 15 minutes~~
a). Calculate the time taken by the car driver. (03mrks)

30. Calculate the area of the shaded part in the diagram below

(use π as $\frac{22}{7}$) (05mrks)



31. 3 bells at a factory ring at intervals of 45 minutes, 20 minutes and 30 minutes to mark shifts of different departments. If they first ring together at 8:00am, at what time do they ring together again?
(05mrks)

32. Using a ruler, a pencil and a pair of compasses only, construct a Rhombus EFGH such that $EF=5\text{cm}$, diagonal $EG=6\text{cm}$ and diagonal $FH=8\text{cm}$.
(04mrks)

(b). Measure angle EFG. (01mrk)

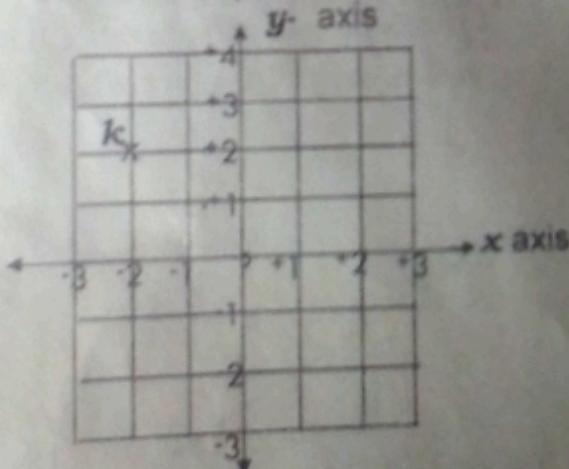
END

17. In a village of 5000 people, 2789 are females and the rest are males. How many more females than males are there?

18. A bus covered a distance of 60km in 48 minutes. Calculate the bus' speed in kilometres per hour.

19. 15 people can clear a garden in 4 days. How many days can 10 people take to clear the garden at the same rate?

20. Use the Cartesian grid below to answer the questions that follow.



(a). State the co-ordinates for point **K**. (01mrk)

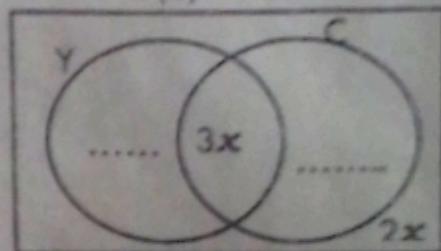
(b). Plot point D (0, +3) on the above grid. (01mrk)

SECTION B: 60 MARKS

21. In a village of 100 farmers, 60 grow cassava(C), 48 grow yams (Y) and $3x$ grow both cassava and yams. $2x$ farmers grow neither of the two food crops.

(a). Use the above information to complete the venn diagram below. (02marks)

$$n(\text{£}) = 100$$



(b). Find the value of x . (2marks)

(b). Find the probability of choosing a farmer who grows one kind of crop to give a speech. (01mrk)

5.7 MTC CENTURY 2023 MARKING CRITERIA
 SECTION A (40MKS) $y + y + 40^\circ = 180^\circ / \text{m}$ $16 \times 5 + 5 - 61 = +5 - 11 \sqrt{\text{M}}$
 $= 864 \sqrt{\text{B}_2}$ $2y + 40^\circ = 180^\circ$ $-6 \sqrt{\text{A}_1}$
 $\angle A = 70^\circ$ $2y + 40^\circ - 40^\circ = 180^\circ - 40^\circ$ $17 \text{ males} = 5000 - 2789$
 $\text{IV} = +4$ $\frac{2y}{2} = \frac{140^\circ}{2}$ $= 2211 \text{ males} \sqrt{\text{B}_1}$
 $\frac{74}{8} \sqrt{\text{B}_2}$ $y = 70^\circ$ more females
 $\frac{7-3}{8} \Leftrightarrow \frac{4}{8} = \frac{1}{2} \sqrt{\text{A}_1}$ $2789 - 2211 = 578 \sqrt{\text{B}_1}$
 $1, 8, 27, 64, \frac{125}{8} \sqrt{\text{B}_1}$
 $1^3, 2^3, 3^3, 4^3, 5^3 \sqrt{\text{B}_1}$
 $9 \div 5 = \sqrt{\text{M}}$ $11. 2 | 48 | 60$ $18. S = \frac{D}{t} \Leftrightarrow 60 \div \frac{48}{50} \text{ km/h} \sqrt{\text{A}_1}$
 $= 1 \text{ rem 4 (finite)}$ $2 | 24 | 30 \sqrt{\text{M}}$ $= \frac{15}{50} \times \frac{50}{48} \text{ km/h}$
 $= 4 \text{ (finite)} \sqrt{\text{A}_1}$ $3 | 12 | 15$ $= 75 \text{ km/h} \sqrt{\text{A}_1}$
 $A = \frac{1}{2} \times \pi \times r \times r \sqrt{\text{M}}$ $(\text{LCF}) = 2 \times 2 \times 3$ $19. 15 \text{ people} \rightarrow 4 \text{ days}$
 $= \frac{1}{2} \times \frac{22}{7} \times \frac{14}{2} \times \frac{14}{2} \sqrt{\text{A}_1}$ $= 4 \times 3 \sqrt{\text{A}_1}$ $1 \text{ person} \rightarrow 15 \times 4 \text{ days}$
 $= 22 \times 14 \text{ cm}^2$ $= 12 \text{ classrooms} \sqrt{\text{A}_1}$ $6 \text{ people} \rightarrow \frac{15 \times 4}{10} \text{ days}$
 $= 308 \text{ cm}^2 \sqrt{\text{A}_1}$ $n = 5 \sqrt{\text{A}_1}$ $= \frac{15 \times 4}{10} \text{ days}$
 $= 2^2 - (2x-3) \sqrt{\text{M}}$ $13. 1 \text{ litre} = 1000 \text{ ml}$ $= 6 \text{ days} \sqrt{\text{A}_1}$
 $\Theta 4 - (-6) = 4+6$ $12 \text{ litres} = 12 \times 1000 \text{ ml}$
 $= 10 \sqrt{\text{A}_1}$ $= 12000 \text{ ml} \sqrt{\text{B}_1}$
 $\frac{2}{3} \times 60 \text{ min} = 40 \text{ min}$ $250 \text{ ml} - 1 \text{ bottle}$
 1 hr min $12000 \text{ ml} - \frac{12000}{250} \text{ bottles}$
 $10 \ 30 \ 70$ $= 48 \text{ bottles}$
 $+5 \ 40 \ 60$
 $16 \ 10$
 $\bullet 16 \text{ hours} \sqrt{\text{B}_1}$
 $h \text{ min}$
 $16 \ 10$
 $-12 \ 00$
 $4 \ 10$ $\bullet 4:10 \text{ pm} \sqrt{\text{B}_1}$
 $\bullet 21$
 $x 1 \text{ time}$
 $, 21$
 $t_2 1$
 1001 three
 $\cancel{40} \cancel{1} \cancel{40} \cancel{1}$
 $\cancel{40} \cancel{1} \cancel{40} \cancel{1}$

14. $12534 \overset{2}{\cancel{5}} \overset{1}{\cancel{3}} \overset{0}{\cancel{0}}$ $20. \text{ a) } (-2, +2) \sqrt{\text{B}_1}$
 12534201 $\text{b) } \text{B}_1 \text{ for point D well place on the grid.}$
 99
 $\frac{+1}{100 \text{ notes}} \sqrt{\text{B}_1}$
 $1 \text{ note} - \text{shillings}$
 $100 \text{ notes} - \text{shillings} \times 100$
 $= \text{shillings} \times 100 \sqrt{\text{B}_1}$
 $\bullet 15.$
 $\angle A = 48^\circ$
 $\angle B = 60^\circ$
 $48-3x \quad 3x \quad 60-3x$
 $2x$
 $\bullet 2x + 48 + 60-3x = 180^\circ$
 $2x-3x + 108 = 180$
 $-x + 108 = 108$
 $\frac{-x}{-1} = \frac{-8}{-1}$
 $x = 8 \sqrt{\text{A}_1}$

$$\textcircled{c} \quad P = \frac{n(DC)}{n(S.S)}$$

$$\begin{aligned} n(DC) &= (48 - 3x)(60 - 3x) \\ &= 48 - 3x + 60 - 3x \\ &= 48 + 60 - 24 - 24 \\ &= 108 - 48 \\ &= 60 \end{aligned}$$

$$P = \frac{60}{100} \sqrt{B_1}$$

0.5 MARKS

$$22 \textcircled{a} \quad 3y - 9 - y + 5 = 2 \quad \text{M1}$$

$$3y - y - 9 + 5 = 2$$

$$2y - 4 = 2$$

$$2y - 4 + 4 = 2 + 4$$

$$\frac{2y}{2} = \frac{6}{2}$$

$$y = 3 \quad \text{M1}$$

$$\textcircled{b} \quad (K) \cancel{KL} - \frac{\cancel{KL} \times K}{K} = \cancel{(KL)}$$

$$K^2 - 36 = 0$$

$$K^2 - 36 + 36 = 0 + 36$$

$$\begin{aligned} K^2 &= 36 \\ \sqrt{K^2} &= \sqrt{36} \end{aligned}$$

$$K = 6 \quad \text{M1}$$

0.5 MARKS

$$23 \textcircled{a} \quad 86.954 \quad \text{M1}$$

$$+ 0.14$$

$$\underline{87.0} \quad \text{M1}$$

$$\textcircled{b} \quad \left(\frac{5}{2} \times \frac{5}{4} \right) \div \left(\frac{5}{2} + \frac{5}{4} \right)$$

$$= \frac{25}{8} \div \left(\frac{10+5}{4} \right) \quad \text{By for } \frac{25}{8}$$

$$= \frac{25}{8} \div \frac{15}{4} \quad \text{for } \frac{15}{4}$$

$$\Leftrightarrow \frac{25}{8} \times \frac{4}{15} = \frac{5}{6} \quad \text{M1}$$

0.5 MARKS

24 \textcircled{a} Let the supplement be x M1

Supp	Angle	Total
x	$4x$	$5x$

$$5x = 180^\circ \quad \text{M1}$$

$$\frac{5x}{5} = \frac{180^\circ}{5}$$

$$x = 36^\circ \quad \text{M1}$$

$$x = 36^\circ \quad \text{M1}$$

$$\begin{aligned} &4500 \\ &4200 \\ &\frac{43}{8} \times 5000 \\ &\underline{8n} 43700 \quad \text{M1} \end{aligned}$$

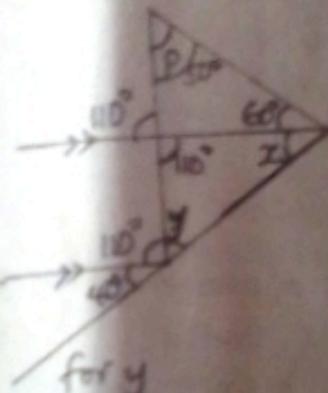
$$\textcircled{b} \quad 2 \frac{1}{2} \text{ kg cost } \text{Rs. } 35000 \quad \text{M1}$$

$$\begin{aligned} 1 \text{ kg costs } \text{Rs. } &\frac{35000}{2} \\ &=\text{Rs. } 17500 \div 2 \end{aligned}$$

$$\frac{2000}{\cancel{35000}} \times \frac{2}{\cancel{5}} = \text{Rs. } 1000 \quad \text{M1}$$

0.5 MARKS

$$\begin{aligned} \textcircled{b} \quad p + 60^\circ &= 110^\circ \quad \text{M1} \\ p + 60^\circ - 60^\circ &= 110^\circ - 60^\circ \\ p &= 50^\circ \quad \text{M1} \end{aligned}$$



for y

$$\begin{aligned} y + 110^\circ + 40^\circ &= 180^\circ \\ y + 150^\circ &= 180^\circ - 150^\circ \\ y &= 30^\circ \quad \text{M1} \end{aligned}$$

for x

$$\begin{aligned} x + y + 110^\circ &= 180^\circ \\ x + 30^\circ + 110^\circ &= 180^\circ \\ x + 140^\circ - 140^\circ &= 180^\circ - 140^\circ \\ x &= 40^\circ \quad \text{M1} \end{aligned}$$

0.5 MARKS

$$27 \textcircled{a} \quad 100^\circ - 55^\circ = 45^\circ \quad \text{M1}$$

$$\frac{32}{44} \times \frac{9}{25} = 238 \text{ boys}$$

$$640 - 238 = 352 \quad \text{M1}$$

$$2 \times \frac{32}{44} = 224 \text{ girls}$$

$$\begin{aligned} \text{Boys} &= \frac{32}{44} \text{ of } 640 \\ 2 \times 238 &= 476 \text{ boys} \end{aligned}$$

total borders

$$224$$

$$\frac{168}{392} \quad \text{M1}$$

0.6 MARKS

$$28 \quad v = 50 \text{ cm}^2 \quad \text{M1}$$

$$= \frac{22}{7} \times 70 \text{ cm} \times 70 \text{ cm}$$

$$\begin{aligned} &= 220 \times 1050 \text{ cm} \\ &= 2310000 \text{ cm}^3 \quad \text{M1} \end{aligned}$$

$$C = \frac{v}{1000}$$

$$= \frac{2310000}{1000} \quad \text{M1}$$

$$= 2310 \text{ litres} \quad \text{M1}$$

$$\begin{array}{r} 2 | 36 \quad \text{M1} \\ 2 | 18 \\ 3 | 9 \\ 3 | 3 \end{array}$$

$$36 = 2 \times 2 \times 3 \times 3 \quad \text{M1}$$

$$10 \quad \text{or } 2^2 \times 3^2$$

0.4 MARKS

$$① T = \frac{D}{V} \Rightarrow \frac{90 \text{ km}}{60 \text{ km/h}} \checkmark M$$

$$\Rightarrow \frac{\frac{3}{2}}{\frac{6}{2}} \text{ hours}$$

$$= 1\frac{1}{2} \text{ hours} \checkmark A_1$$

$$\begin{aligned} \text{Total time} \\ = 1\frac{1}{2} \text{ hours} + \frac{1}{2} \text{ hour} \\ = 2 \text{ hours} \checkmark B_1 \end{aligned}$$

$$\text{b) Average Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$= \frac{90 \text{ km}}{2 \text{ h}} \checkmark M$$

$$= 45 \text{ km/h} \checkmark A_1$$

05 MARKS

Q9) Trapezium

$$\begin{aligned} A &= \frac{1}{2} h(a+b) \checkmark M \\ &= \frac{1}{2} \times 7 \text{ cm} (20 \text{ cm} + 14 \text{ cm}) \\ &= \frac{1}{2} \times 34 \text{ cm}^2 \\ &= 119 \text{ cm}^2 \checkmark A_1 \end{aligned}$$

Semi circles

$$\begin{aligned} A &= \frac{1}{2} \pi r^2 \\ &= \frac{1}{2} \times \frac{22}{7} \times \frac{1}{2} \text{ cm} \times 7 \text{ cm} \\ &= 77 \text{ cm}^2 \checkmark B_1 \end{aligned}$$

Shaded area

$$119 \text{ cm}^2 \checkmark M$$

$$- 77 \text{ cm}^2$$

$$42 \text{ cm}^2 \checkmark A_1$$

05 MARKS

$$31 \quad \begin{array}{cccc} 2 & 45 & 20 & 30 \end{array} \checkmark M$$

$$\begin{array}{ccccc} 2 & 45 & 10 & 15 \\ 3 & 45 & 5 & 15 \end{array}$$

$$\begin{array}{ccccc} 3 & 15 & 5.5 & \\ 5 & 5 & 5 & \end{array}$$

$$\begin{array}{ccccc} 5 & 5 & 5 & \\ 1 & 1 & 1 & \end{array}$$

$$\begin{aligned} L_{\text{total}} &= 2 \times 2 \times 3 \times 3 \times 5 \checkmark M \\ &= 4 \times 9 \times 5 \\ &= 180 \text{ minutes} \checkmark A_1 \end{aligned}$$

$$\begin{aligned} 60 \text{ min} &\rightarrow 1 \text{ hour} \\ 180 \text{ min} &\rightarrow \frac{180}{60} \text{ hours} \\ &= 3 \text{ hours} \checkmark B_1 \end{aligned}$$

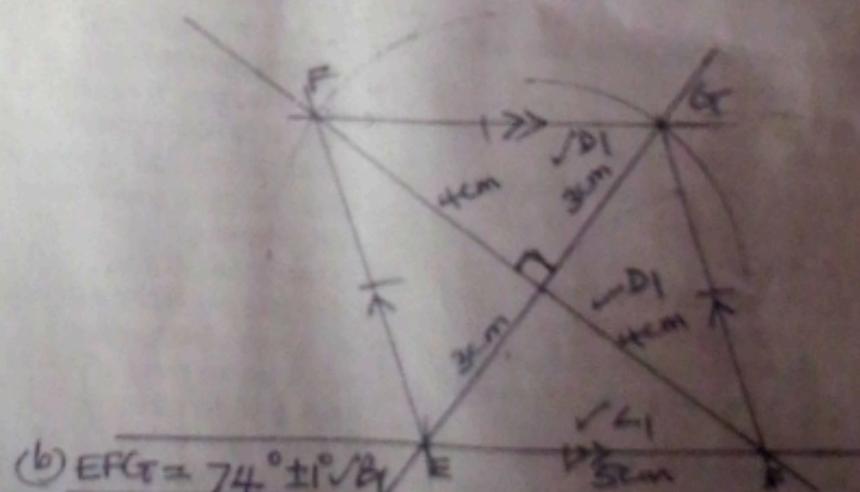
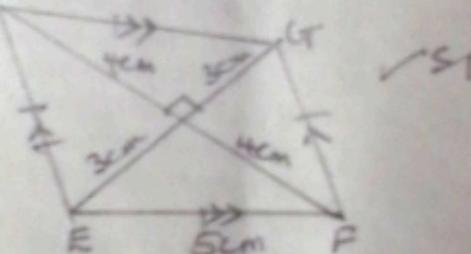
h Min

$$\begin{array}{r} 8 \ 00 \\ + 3 \ 00 \\ \hline 11 \ 00 \end{array} \checkmark B_1$$

11:00am

05 MARKS

320) Sketch



$$(b) EFGT = 74^\circ \pm 1^\circ \checkmark B_1$$

05 MARKS