P.7 PRE MOCK ONE

E- LEARN EXAMINATIONS BOARD

MTC GUIDE

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COMING UP

5 PRE MOCK SETS & 1 SPECIAL MOCK

NAME:.....

SCHOOL:.....

0780-438054 0708-438054

SECTION A: 40 MARKS

1. Add:36+23

3 6
+ 2 3
5 9

6+3=9

36+23=59

OR

3 0 + 6
2 0 + 3
50 + 9 = 59

B2 for correct answer 59

2. Write 9416 in words.

Thousands	Units
9	416

B2 for correct answer

9416=Nine thousand, four hundred sixteen

3. A lesson which lasted 40 minutes ended at 8:10am. At what time did it start?

TIME

S. T=E.T- Duration
Hr: Min
$^{7}\not{8}$:1 0^{+60}
- 4 0
7 : 3 0am

60+10=70
70-40 =30

M1 correct method
A1 for 7:30am

✓follow through Clearly.
✓Reject any answer without a.m.

∴ it started at 7:30 a.m

4. A trader has 8.75kg of sugar to be packed in packets of 0.25kg each.

How many packets will a trader make?

FRACTIONS

No. of packets =(8.75÷0.25)

$$\frac{875}{100} \div \frac{25}{100}$$

$$\overset{35}{\cancel{875}} \times \frac{100}{\cancel{25}_{1}}$$

$\cancel{100}_{1}$

35packets

M1 for multiplicative inverse
A1 for 35 packets

5. Write the next number in the sequence in Roman numerals 1,3,7,13, 21, ...

1, 3, 7, 13, 21, 31
+2 +4 +6 +8 +10
21+10=31

Roman numerals.
31 = 30 + 1
XXX I
XXXI

NUMBERS PATTERNS

M1 for correct next number
A1 for XXXI

6. Write 2684 in standard form.

2684 ÷10 = 268.4....(i)
268.4÷10 = 26.84.....(ii)
26.84÷10 = 2.684.....(iii)
2.684×10^{3}

M1 for correct division
A1 for correct answer

WHOLE NUMBERS

7. Solve for P in $6p - 4 = k$ if $k = 8$

6p – 4 = K
6p – 4 =K
6p – 4 =8

M1 for correct collecting like terms correctly
A1 for final answer P=2

$6P - 4 + 4 = 8 + 4$

$\frac{6P}{6} = \frac{12}{6}$

$P = 2$

ALGEBRA

8. Edward used 3.67kg of cement to construct a wall.
Express the quantity of cement used in grams.

1kg = 1000grams

3.67kg = (3.67 x 1000) grams

$\frac{376}{100}$ **x 1000grams**

(367 x 10) grams

3670 grams

M1 for correct method

A1 for final answer 3670 grams

APPLICATION OF FRACTIONS

9. What number has been expanded to form:

$(7 \times 10^2) + (2 \times 1^0) + (6 \times 10^{-1})$

$(7 \times 10 \times 10) + (2 \times 1) + 6 \times \frac{1}{10}$

$700 + 2 + \frac{6}{10}$

$700 + 2 + 0.6$

700.0

$+ \frac{2.0}{0.6}$

702.6

M1 for expression

A1 for final answer 702.6

WHOLE NUMBERS

10. Simplify: 4k – 6m + 6k -4m.

4k+6k – 6m – 4m

10k – 10m OR 10(k-m)

B1 for correct arrangement

A1 for final answer

11. Find the value of angle **m** in the figure below.

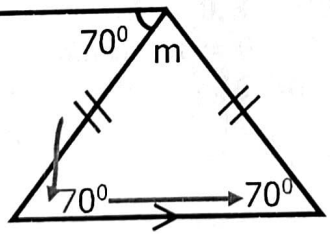
Value of M.

$m + 70^0 + 70^0 = 180^0$

$m + 140^0 = 180^0$

$m + 140^0 - 140^0 - 180^0 - 140^0$

$m = 40^0$



M1 for correct method

A1 for final answer 40^0

ANGLES

12. Round off 64.98 to the nearest tenths.

64.9

+0.1

65.0

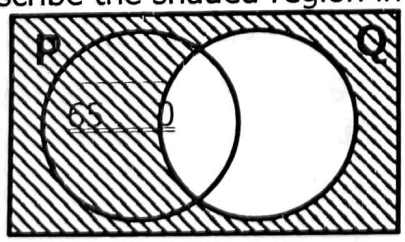
T	O	.	T	h
6	4		9	8

$\therefore$ 64.98 ≈ 65.0

M1 for correct method

A1 for final answer 65.0

13. Describe the shaded region in the Venn diagram below.



B2 for correct answer

Set Q' or Q'

SET CONCEPTS

14. Find the number which has been prime factorized $\{2_1, 2_2, 2_3, 5_1\}$

OPERATION ON WHOLE NUMBERS

Number $= (2 \times 2) \times (2 \times 5)$ ***B1 for multiplication***

Number $= 4 \times 10$

Number $= 40$ ***A1 for 40***

15. The total surface area of a cube is $150\ cm^2$. Find its volume.

$T \cdot S.A = 6S^2$

$6S^2 = 150$

$\frac{6 \times S^2}{6} = \frac{150^{25}}{66}$

$\sqrt{S^2} = \sqrt{25}$

$\cancel{\sqrt{S \times S}} = \cancel{\sqrt{5 \times 5}}$

$S = 5\ cm$

Volume $= 5 \times 5 \times 5$

$5\ cm \times 5\ cm \times 5\ cm$

$\underline{125\ cm^3}$

M1 for correct method

A1 for 125cm³

✓follow through clearly.

✓Reject any answer without Correct units.

LENGTH, MASS AND CAPACITY

16. Simplify: $\frac{3}{4} \div \frac{1}{2}$

$\frac{3}{4} \div \frac{1}{2} = \frac{3}{4} \times \frac{2}{1}$

$\frac{3 \times 2}{4 \times 1}$

$\frac{6}{4}$

$\frac{3}{2}$

$1\frac{1}{2}$

M1 for multiplicative inverse

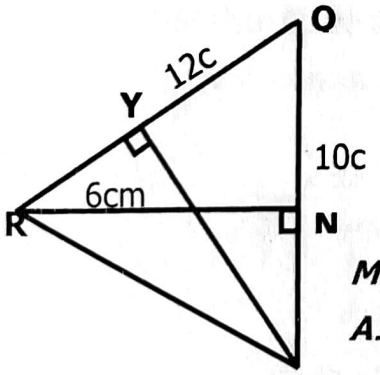
A1 for $1\frac{1}{2}$

✓follow through Clearly.

✓Reject any answer without clear

FRACTIONS

17. In the figure below, find the length PY.



Area of $\triangle PRY$ = Area of $\triangle PRQ$

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

$\frac{1}{2} \times 12\ cm \times PY = \frac{1}{2} \times 10\ cm \times 6\ cm$

$\frac{1}{\cancel{2}} \times \cancel{12}^{6}\ cm \times PY = \frac{1}{\cancel{2}} \times \cancel{10}^{5}\ cm \times 6\ cm$

$6\ PY\ cm = 5\ cm \times 5\ cm$

$\frac{\cancel{6}\ PY\ \cancel{cm}}{\cancel{6}\ \cancel{cm}} = \frac{30^{5}\ cm^2}{\cancel{6}\ cm}$

length PY = 5cm

M1 for correct method

A1 for correct answer

18. A man drove his car for a distance of 60 km in 4 hours. Express his speed in mlsec.

Speed(Km/h)

$S = (D \div T)$

$\frac{60km}{4hrs}$

$15km/h$

$1km = 1000m$

$15km = 15 \times 1000m$

$D = 15000m$

$TIME: \quad 1hr = 3600sec$

∴ speed $= \frac{15000m}{3600sec}$ $4\frac{1}{6}$

M1 for correct method

A1 for correct answer

19. There were 40 children and 200 adults at a concert: What fraction of the people were adults?

Total no $= 40 + 200$

$= 240.$

$$\text{Fraction} = \frac{\text{No of adults}}{\text{Total NO}}$$

$\frac{200}{240}$

$\frac{5}{6}$

20. Given that $P = 6$ and $R = 4$. Calculate the value of $2R - \frac{1}{2}P$.

$(2 \times R) - \left(\frac{1}{2} \times P\right)$ ***M1 for correct substitution***

$(2 \times 4) - \left(\frac{1}{2} \times 6^{3}\right)$ ***A1 for correct difference***

$8 - 3$

5

ALGEBRA

SECTION B. (6OMARKS)

21. (a) Simplify: $\frac{0.12 \times 5.4}{0.03 \times 0.6}$ *(03 marks)*

$(0.12 \times 5.4) \div (0.03 \times 0.6)$ *follow through the working*

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

$\frac{12}{100} \times \frac{54}{10} \times \frac{100}{3} \times \frac{10}{6}$ ***B1 for reciprocals***

FRACTIONS ***A1 for 36***

$4 \times 9 = 36$

(b) Express the recurring decimal 0.3636..... as common fraction. *(03 marks)*

Let the fraction be (k)

$K = 0.3636 \ldots$ (i)

$100 \times K = 0.3636 \times 100$

$100k = 36.3636$ **(ii)**

$100k = 36.3636$

$-k = 0.3636$

$99k = 36$

$\frac{99k}{99} = \frac{36}{99}$

$k = \frac{4}{11}$

M1 for correct formula

B1 for correct subtraction

A1 for correct simplified fraction

22. (a) Write 546 in Roman numerals. *(02 mark)*

WHOLE NUMBERS

$546 = 500 + 40 + 6$

$= \text{D} \quad \text{XL} \quad \text{VI}$

$546 = \text{DXL VI}$

M1 for correct method

A1 for correct answer

(b) Find the sum of the value of 8 and place value of 6 in the numeral 8670. *(02 marks)*

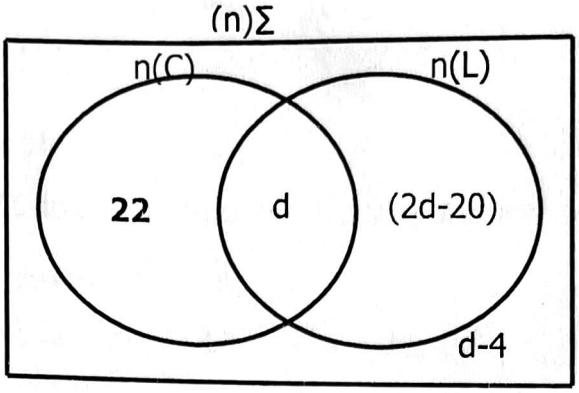
Value of 8 is 8x1000=8000 ***M1 for addition***

Place value of 6 is hundreds – 100 ***A1 for correct 8100***

Sum is 8000+100

8100

23. In abus, 22 passengers bought chicken (C) only, **d** passengers bought both Chicken and Liver. **(2d-20)** bought Liver (L) only while **d-4** bought neither of the two Complete the Venn diagram below *(02 marks)*



B1 for each correct entry

(b) If the number of Passengers who bought liver is twice the passengers who did not buy any of the two types, find the value of d. *(02 marks)*

$n(\text{CUL})' \times 2 = n(L)$

$2(d-4) = d + 2d - 20$

$2d - 8 = 3d - 20$

$2d - 8 + 8 = 3d - 20 + 8$

$2d = 3d - 12$

$2d - 3d = 3d - 3d - 12$

$\frac{-d}{-1} = \frac{-12}{-1}$

$d = 12.$

follow through clearly up to the last step.

M1 for correct formation

A1 for d=12

(c) Find $n(\Sigma)$. *(02 marks)*

$22 + d + (2d - 20) + d - 4$

$22 + 12 + (2 \times 12 - 20) + 12 - 4$

$34 + 4 + 8$

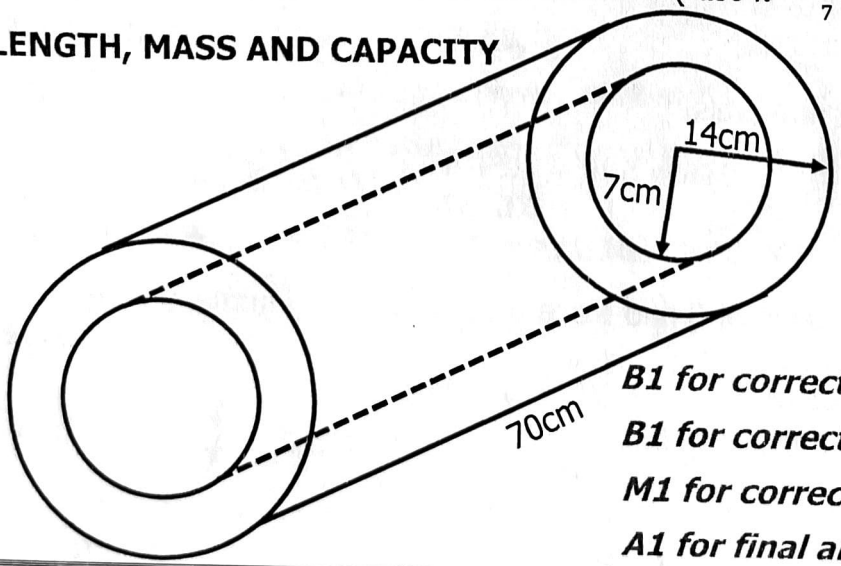
$n(\Sigma) = 46$

B1 for correct formation of an equation

A1 for 46

24. The figure below shows a cylindrical hollows pipe of concrete. Use it to answer the questions that follow.

(a) Calculate the volume of the concrete (use $\pi = \frac{22}{7}$) *(05 marks)*



B1 for correct volume of outer pipe

B1 for correct volume of inner pipe

M1 for correct operation

A1 for final answer

Outer pipe	Inner pipe	concrete
Vol= ($\pi r^2 h$) $\frac{22}{7}\times 14cm\times 14cm\times \overset{10}{\cancel{70}}cm$ $22\times 14cm\times 14cm\times 10cm$ $(22\times 14\times 14\times 10)\ cm\times cm\times cm$ **$43120cm^3$**	**Vol= ($\pi r^2 h$)** $\frac{22}{7}\times 7cm\times 7cm\times \overset{10}{\cancel{70}}cm$ $22\times 7cm\times 7cm\times 10cm$ $(22\times 7\times 7\times 10)\ cm\times cm\times cm$ **$10780cm^3$**	**43120** **-10780** **32340cm^3**

25. Mr. Kato bought 5 books and 3 pens at sh. 25,000. If the cost of a book is sh 200 more than a pen, find the amount of money spent on each item. *(05 marks)*

ALGEBRA

Let the cost above be (k)		
Book	**pen**	**cost.**
$K + sh \cdot 200$	k	
$5(k + sh \cdot 200)$	$3k$	**sh. 25,000**

value of k $5(k + sh.200) + 3k = sh.25000$

M1 for correct formation of an equation

B1 for correct collection of like terms

B1 for $k = sh \cdot 3000$

A1 for Sh. 16000

- *check un equation formation*
- *Follow through clearly*
- *Reject any answer without correct units.*

$$\begin{cases} 5k + sh \cdot 1000 + 3k = sh \cdot 25000 \\ 8k + sh \cdot 1000 = sh \cdot 25000 \\ 8k + sh \cdot 1000 - 1000 = sh \cdot 25000 - 1000 \\ \frac{8k}{8} = \frac{sh \cdot 24000}{8} \\ k = sh \cdot 3000 \end{cases}$$

Books

$k + sh \cdot 200$

$sh. 3000 + 200$

$sh \cdot 3200 \times 5$

Sh. 16000

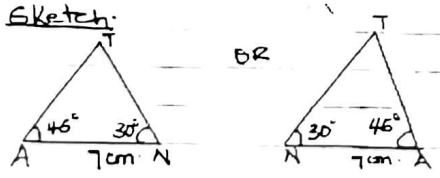
Pens

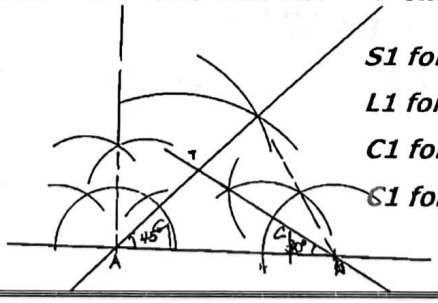
3×3000

Sh. 9000

26. (a) Using a ruler, a pair of compasses and a sharp Pencil, construct a triangle **TAN** such that angle $TAN = 45°$, $TNA = 30°$ and line $AN = 7$ cm. *(04 marks)*

Sketch





S1 for correct sketch

L1 for correct length line AN

C1 for correct <A

C1 for correct <N

GEOMETRY

(b) Measure line **TN** 5.1 or 5.2 or 5.3 cm. ~~*Reject 5 cm*~~ *(01 mark)*

B1 for correct length

A man drove at 160 km/h for $1\frac{1}{2}$ hours. He rested for 30 minutes. After resting, he covered 120 km at 60 km/h.

(a) What distance did he cover before resting? *(02 marks)*

Distance $= S \times T$

$160\text{km/h} \times 1\frac{1}{2}\text{hrs}$

$\frac{160\text{ km}}{1\text{h}} \times \frac{3}{2}\text{hrs}$

240 km

M1 for correct method

A1 for final answer 240km

TIME, DISTANCE AND SPEED

(b) Calculate the average speed for the whole journey. *(03 marks)*

Avenge speed $= \frac{T \cdot D \cdot C}{T \cdot T \cdot T}$

$T \cdot D \cdot C = 240\text{ km} + 120\text{ km}$

T.T.T $= 1\frac{1}{2}\text{hrs} + 30\text{ min} + \frac{120}{60}$

$(1\frac{1}{2} + \frac{1}{2} + 2)$

4hours

Speed $= \frac{360}{4\text{hr}}$

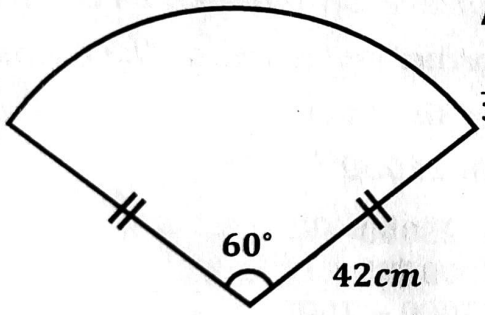
90km/h

M1 for correct method

B1 for total time taken

A1 for 90km/h

28. (a) Calculate the area of the shape below. (Use $\pi = \frac{22}{7}$) *(02 marks)*



Area= $\frac{\theta}{360}\pi r2$

$\frac{60}{360}\text{x}\frac{22}{7}\text{x}42cm\text{x}42cm$

$1 \times 22 \times 6\text{cm} \times 7\text{cm}$

924cm²

M1 for correct substitution and operation

A1 for final correct answer with units

(b) The sum of the parallel lines of a trapezium is 27cm and its height is 27cm and its height is 8cm. Calculate its area. *(02 marks)*

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

$(\text{a} + \text{b}) = 27cm, h = 8cm$

$\text{A}=\frac{1}{2} \times 8\text{cm} \times 27\text{cm}$

$4\text{cm} \times 27\text{cm}$

108cm²

M1 for correct substitution and operation

A1 for final correct answer with units

(c) What is 25% of 3 dozen books?

1 dozen = 12 items

3 dozen books = 3x12 books

36 books

$\frac{25}{100}\text{x}36\text{ books}$

9 books

B1 for 36 books

B1 for 9 books

29. (a) What number has been expanded below. *(02 marks)*

$$(7 \times 10^3) + (6 \times 10^2) + (4 \times 10^{-2})$$

$$7 \times 10 \times 10 \times 10 + 6 \times 10 \times 10 + 4 \times \frac{1}{10} \times \frac{1}{10}$$

$$7000 + 600 + \frac{4}{100}$$

$$7000 + 600 + 0.04$$

$$\begin{array}{r} 7000.00 \\ 600.00 \\ +\ 0.04 \\ \hline 7600.04 \end{array}$$

(b) How many 500ml cups of milk can be obtained from 8 litres? *(02marks)*

No of 500ml cups.

1L $\rightarrow 1000\text{ml}$

8 L $\rightarrow 8 \times 1000\text{ml}$ *M1 for correct* ***conversion***

8000ml. *A1 for final correct* ***answer as 16 cups***

$8000\text{ml} \div 500\text{ml}$

16 cups

30. The sum of interior angles of a regular polygon is $1440°$. *(03 marks)*

(a) Name the polygon.

$180°(n-2) =$ **interior ∠ sum** **GEOMETRY, POLYGONS**

$180°(n-2) = 1440°$

$180°n - 360° = 1440°$

$180°\pi - 360° = 1440° + 360°$ *M1 for correct* ***method***

$\frac{180°n}{180°} = \frac{18400°}{181°}$ ***B1 for 10 sides***

$n = 10$ sides. ***A1 for Octagon.***

The polygon is Octagon.

(b) Find the size of each exterior angle. *(02 marks)*

$$\text{Ext} < = \frac{360°}{\text{No. of sides}}$$ *Follow the working*

M1 for correct substitution $\frac{360°}{10}$ *Reject any answer*

A1 for 36⁰ $36°$. *with out units.*

31. The rates at which the bank buys and sells united states dollar and Kenya shillings are given in the table below:

Currency	**Buying**	**Selling.**
1 US dollar	Ugsh. 3500	Ugsh. 3600
1 Kenya shilling	Ugsh. 30	Ugsh. 35

(a) If a trader has 600 dollars and 400 Kenya shillings, how much money in Uganda shillings can he get from the bank? *(03 marks)*

$1\ dollar = \textbf{Ugsh. } 3500$

$600\ dollar = (600 \times 3500)$

Ugsh.2,100,000

$1\ ksh = \textbf{Ugsh. } 30$

$400 ksh = (30 \times 400)$

Ugsh.12000

Total amount (Ugsh. 2,100,000 + Ugsh. 12000)

Ugsh. 2,100,000
Ugsh. +12000
Ugsh. 2,112,000

M1 for correct method

B1 for Ugsh. 2,100,000

A1 for Ugsh. 2,112,000

(b) Liza has 1050 dollars, how much can he exchange for Kenya shillings. *(02 marks)*

(Dollars → Ugsh) Ugsh $1050 \times 3500 = \text{Ugsh. } 3675,000$

(Ugsh → Ksh) $\frac{\text{Ugsh. } 3675,000}{35}$

49 sh 3675,0000

Ksh 105000

M1 for changing dollars to Ugsh

A1 for converting Ugsh to Kenya shillings

32. The sum of three consecutive Counting numbers is 18. Find the numbers. *(04 marks)*

1^{st} no	2^{nd}	3^{rd}	sum
n	$n+1$	$n+2$	18

1^{st} no	2^{nd}	3^{rd}
5	6	7

value of (n)

n+n+1+n+2=18

3n+3=18

3n+3-3=18-3

n=5

M1 for correct formation of equation

B1 for collecting like terms

A1 for correct value of n

B1 for correct two last numbers

NUMBER PATTERNS AND SEQUENCES

END