PRE PLE 2024

6/10

MATH GUIDE

COMING UP

P.7 PRE-PLE EXAMS (10 SETS)

NAME: ....

SCHOOL: ....

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*Answer **all** the questions in this section*

*Questions **1** to **20** carry **two** marks each*

1. Work out: 34 × 2

   ```
     3 4
   × 2
   ─────
     6 8
   ```

   B₂ for correct answer

2. Write 89,048 in words.

Thousands	Units
89	048

   B₂ for writing in words

   Eighty-nine thousand forty-eight

3. Simplify: 6rp - 6p - 2rp - 3rp² – p

   $6rp - 2rp - 6p - p - 3rp^2$

   $4rp - 7p - 3rp^2$

   $4rp - 3rp^2 - 7p$

   $\underline{rp^2 - 7p}$

   B₁ for Collecting like terms.
   B₁ for final answer.

4. Find the next missing number 2, 3, 5, 7, 11, 13, ...
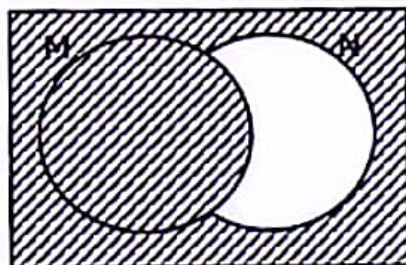
   2, 3, 5, 7, 11, 13, 17

   (prime numbers)

   B₁ for 17
   Review other types of numbers

5. Shade (N-M)¹ on the Venn diagram below.

   B₂ for correct shaded region

6. Work out: $2\frac{1}{2} + \frac{5}{6}$

   $\frac{(8 \times 2) + 1}{8} + \frac{5}{6}$

   $\frac{17}{8} + \frac{5}{6}$

   $\frac{(17 \times 6) + (5 \times 8)}{8 \times 6}$

   $\frac{102}{48} = 40$

   B₁ for $\frac{17}{8} + \frac{5}{6}$

   B₁ for $2\frac{23}{24}$

2

$$\frac{148^{71}}{48_{24}}$$

$$\frac{71^{2rem23}}{24}$$

$$2\frac{23}{24}$$

7. A double forty-five minute lesson ended at quarter to 1:00pm. When did it start?

(45×2) minutes

90 minutes

$(\frac{90}{60})$ minutes

$$\frac{90^{1\,r\,3}}{60_1}$$

B_1 for $1\frac{1}{2}$ h

$$1\frac{3^1}{6_2}$$

A_1 for final answer.

$1\frac{1}{2}$ h

Hours	minutes
12	45
- 1	30
11	15

<u>Therefore, it started at 11:15am</u>

8. Use tallies to represent the product of 7 and 3.

7×3

B_1 for 21

= 21 ~~/////~~ ~~/////~~ ~~/////~~ ~~/////~~ /

A_1 for writing tallies correctly

9. Simplify: $^-3 - {^+8} =$

$-3 - (+8)$

$-3 - 8$

B_1 for -3-8

= <u>-11</u>

B_1 for -11

~~Reject without brackets~~

10. Given that Q = (1,2,3). Find the number of subsets that can be formed from set Q.

Number of subsets = 2^n

Number of subsets = 2^3

B_1 for 2^3

Number of sunsets = $2\times2\times2$

Number of subsets = 4×2

B_1 for 8 subsets

11. Which number must be added to the smallest 3-digit number formed by using digits 4, 9, 0 to get 1000?

$$\begin{array}{r} 1000 \\ -\ 409 \\ \hline 591 \end{array}$$

B₁ for 409

B₁ for 591

12. Today is the third day of the week, what day of the week will it be after 42 days from now?

Sun	Mon	Tue	Wed	Thur	Fri	Sat
0	1	2	3	4	5	6

Wed + 42 = -(mod 7)

3 + 42 = - (mod 7)

45 = - (mod 7)

$45^{6\,r\,3}$

$\overline{\qquad 7}$

Wednesday = 3 (mod 7)

B₁ for 3 + 42 = - (mod 7)

B₁ for Wednesday.

Review finite system

13. Convert 0.75kg to grams.

1kg = 1000gm

$0.75kg = \left(\dfrac{75}{100} \times 1000\right) gm$

0.75kg = 750gm

B₁ for correct method.

B₁ for 0.75kg = 750gm

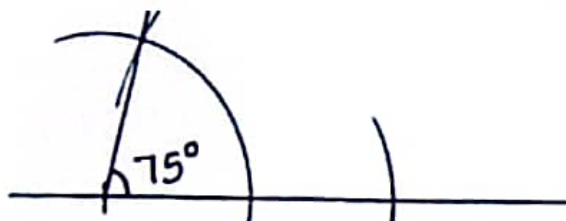14. Write 3002 in scientific form.

3002 ÷ 10 = 300.2

300.2 ÷ 10 = 30.02

30.02 ÷ 10 = 3.002

3.002×10^3

B₁ for correct division

B₁ for 3.002×10^3

15. Using a ruler, a pencil and a pair of compasses only construct an angle of 75°.

B₁ for construction and naming the angles.

Accept other alternatives

16. In a meeting, the ratio of men to women is 2:3. If there are 12 men, how many women are in the meeting?

Men	Women	Total
2	3	5
12		

$\left(12 \div \frac{2}{5}\right)$ people

$\left(\overset{6}{12} \div \frac{5}{2}\right)$ people

(6×5) people

30 people

$\left(\frac{3}{5} \times \overset{6}{30}\right)$ women

(3×6) women

= **18 women**

B₁ for 30 people.

B₁ for 18 women

Accept other alternatives

17. Find the smallest number that can be divisible by 8 and 12 without leaving a remainder.

2	8	12
2	4	6
2	2	3
3	1	3
	1	1

B₁ for the table

B₁ for 24

Accept listing multiples of 8 and 12

$= 2 \times 2 \times 2 \times 3$

$= 4 \times 6$

$\underline{= 24}$

18. A trader bought a dozen of pens at Sh. 6000. He later sold each pen at Sh. 700. Calculate his profit.

S.p

Sh. (700×12)

Sh 8400

$P = SP - BP$

Sh 8400

−sh 6000

Sh 2400

B₁ for sh. 8400

B₁ for Sh 2400

19. Find the area of a circle whose diameter is 14cm.

$$A = \pi r^2$$

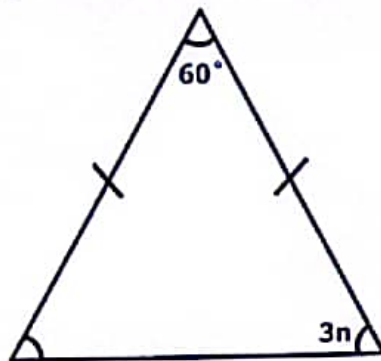$$A = \frac{22}{7} \times \frac{14cm}{2} \times \frac{14cm}{2}$$

$(22 \times 7)cm^2$

$\underline{= 154cm^2}$

B₁ for correct substitution in the formula.

B₁ for = 154cm²

20. Study the diagram below and find the value of n.

B₁ for equating to 180°

B₁ for n = 20°

$3n + 3n + 60° = 180°$

$6n + 60° = 180°$

$6n + 60° - 60° = 180° - 60°$

$6n = 120°$

$\frac{6n}{6n} = \frac{120^{20}}{6}$
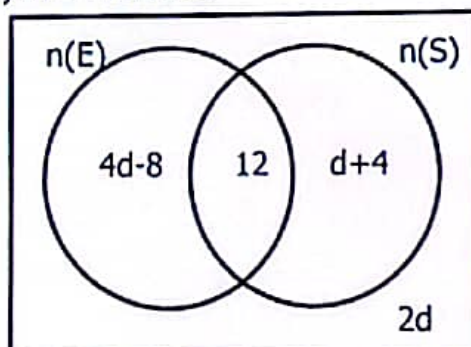
$\underline{n = 20°}$

SECTION B: 60 MARKS

Answer all questions in this section

Marks for each question are indicated in the brackets.

21. The Venn diagram below shows the number of pupils who like English (E) and Science (S) in a P.6 class.

6

a) If 36 pupils like English, find the value of d. (03marks)

$$4d - 8 + 12 = 36$$
$$4d + 4 = 36$$
$$4d + 4 - 4 = 36 - 4$$
$$4d = 32$$
$$\frac{4d}{4} = \frac{32^8}{4}$$
$$\underline{d = 8}$$

B₁ for using correct data

B₁ for collecting like terms

A₁ for collecting like terms

b) How many pupils are in the class? (02marks)

$$(4d - 8) + 12 + (d + 4) + 2d$$
$$(4 \times 8) - 8 + 12 + (8 + 4) + (2 \times 8)$$
$$(32 - 8) + 12 + (12 + 16)$$
$$24 + 24 + 16$$
$$\underline{64 \text{ pupils}}$$

B₁ for correct substitution

B₁ for 64 pupils

22. The following are the buying and selling rates of foreign currencies and the Uganda shillings at Bamuda forex bureau. Study it and answer the questions that follow.

Currency	Buying rate	Selling rate
One Us dollar	Sh. 3700	Sh. 3750
One pound sterling	Sh. 4850	Sh. 4940
One Rwanda franc	Sh. 4	Sh. 45

(a) A business woman had Uganda shillings 7,500,000 and wanted to get United States dollars. How much US dollars was she given? (02marks)

Ug.sh 3750 – 1 us dollar

Ug.sh 7,500,000 – $\left(\frac{7500000}{3750}\right)$ us dollars

Ug.sh 7,500,000 – 2000 us dollars

<u>She was given 2000 Us dollars</u>

M₁ for correct method

A₁ for 2000 dollars

(b) If a trader had 60-pound sterlings and 90,000 Rwanda francs, how much in Uganda shillings did he get from the same forex bureau? (03marks)

1 pound sterling – ugsh 4850

60 pound sterlings – ugsh (4850 × 60)

7

<u>60 pound sterlings – ugsh 291,000</u>

1 Rwanda franc – ugsh 4
90,000 Rwanda Franc – ugsh 90,000 × 4
<u>90,000 Rwanda Franc – ug sh 360,000</u>

B_1 for correct multiplication

Ugsh 291, 000
+<u>Ugsh 360, 000</u>
<u>Ug sh 651, 000</u>

B_1 for 360,000

A_1 for Ug sh 651, 000

23.   A farmer collects 5400 eggs a day on his farm and packs them on trays which carry 30 eggs each. If he used a motorcycle to carry 20 trays per trip to the market, how many trips will the motorcycle make in order to transport all the eggs?

(04marks)

$\left(\dfrac{5400}{30}\right)$ trays

<u>= 180 trays</u>

M_1 for correct division

B_1 for 180 trays

B_1 for correct division to get trips

A_1 for 9 trips

$\left(\dfrac{180}{20}\right)$ trips

<u>= 9 trips</u>

24.   a)   Solve: $m^2 - 8 = 28$ (03marks)

$m^2 - 8 + 8 = 28 + 8$

$m^2 = 36$

$\sqrt{m^2} = \sqrt{36}$

$\sqrt{36}$

2	36
2	18
3	9
3	3
	1

M_1 for collecting like terms

B_1 for finding square root of 36

A_1 for m=6

$2 \times 3 = 6$

<u>M = 6</u>

b) A father is now 24years older than his son. Their total age is 34years. How old is the son now?

(03marks)

	Father	Son	Total
Now	m+24	m	34

$m+m+24 = 34$

$2m + 24 = 34$

$2m + 24 - 24 = 34 - 24$

$2m = 10$

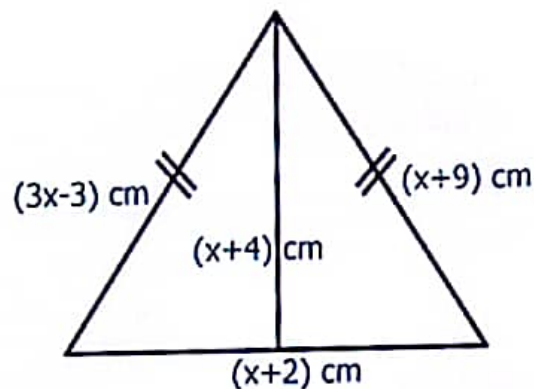$\dfrac{2m}{2} = \dfrac{10^5}{2}$

$\underline{m = 5}$

M_1 for forming correct equation.

B_1 for collecting like terms.

A_1 for 5 years

<u>son is 5 years</u>

25. Use the figure below to answer the following questions

(a) Find the value of x.

(02marks)

$$\frac{(3x-3)\,cm}{cm} = \frac{(x+9)\,cm}{cm}$$

$3x - 3 = x + 9$

$3x - x - 3 = x - x + 9$

$2x - 3 = 9$

$2x - 3 + 3 = 9 + 3$

$2x = 12$

$\dfrac{2x}{2} = \dfrac{12^6}{2}$

$\underline{x = 6}$

M_1 for equating the sides.

A_1 for x=6

(b)   Calculate the area of the figure   (03marks

Base
(x+2)cm
(6+2)cm
=**8cm**

B₁ for finding the base and height

M₁ for correct substitution in the formula

Height
(x+4)cm
(6+4)cm
10cm

A₁ for A=40cm

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

$$A = \frac{1}{2} \times 8^4 cm \times 10cm$$

A=4cm × 10cm

A= 40cm²

26.   A bus driver drove at a speed of 90km/hr. for 2hours from town A to town B. He continued to town C at a speed of 85km/hr. for 5 hours.

(a)   Find the total distance from town A to C.   (03marks

D=S×T

$$D = \frac{90km}{h} \times 2h$$

D=(90×2)km

D = 180km

B₁ for 180km

B₁ for 425km

A₁ for 605km

D=S×T

$$D = \frac{85km}{h} \times 5h$$

D=(85×5)km

D=425km

TD
425km
+**180km**
605km

(b) Calculate the driver's average speed for the whole journey. *(02marks)*

T.T

(2 + 5) hours = 7 hours
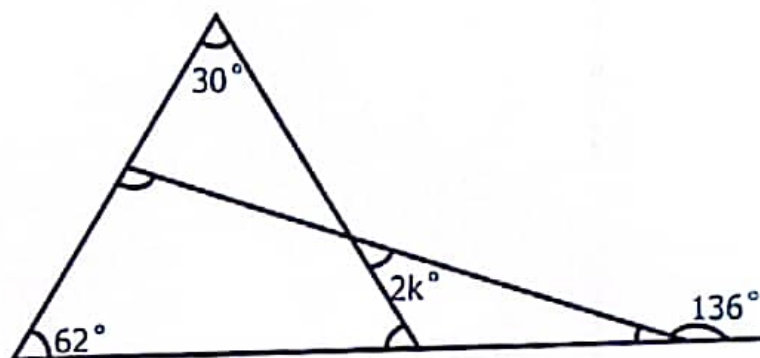
B_1 for correct division

$$A.S = \frac{T.D}{T.T}$$

A_1 for $A.S = 86\frac{3}{7}km/h$

$$A.S = \left(\frac{605^{86rem3}}{7}\right)km/h$$

$$A.S = 86\frac{3}{7}km/h$$

27. **(a)** Find the value of 'k in the figure below A *(03 marks)*

$180° - (62° + 30°)$
$180° - 92°$
$\underline{=88°}$

B_1 for 88°

$180° - 88° = 92°$

B_1 for collecting like terms

A_1 for K=22

$$\frac{2k°}{1°} + \frac{92°}{1°} = \frac{126°}{1°}$$
$2k + 92 = 136$
$2k + 92 - 92 = 136 - 92$
$2k = 44$
$$\frac{2k}{2} = \frac{44^{22}}{2}$$
$\underline{K = 22}$

(b) What is of $\frac{1}{4}$ the supplement of 60°? *(02marks)*

$180°$
$\underline{-60°}$
$\underline{120°}$

¼ of 120°

$\frac{1}{4} \times \cancel{120}^{30}$

= 30°

28. Using a ruler, a pencil and pair of compasses only, construct a triangle **ABC** in which line **AB** = 8cm, angle **BAC** = 45° and angle **ABC** = 60°. Drop a perpendicular line from point C to meet **AB** at N. *(05 marks)*
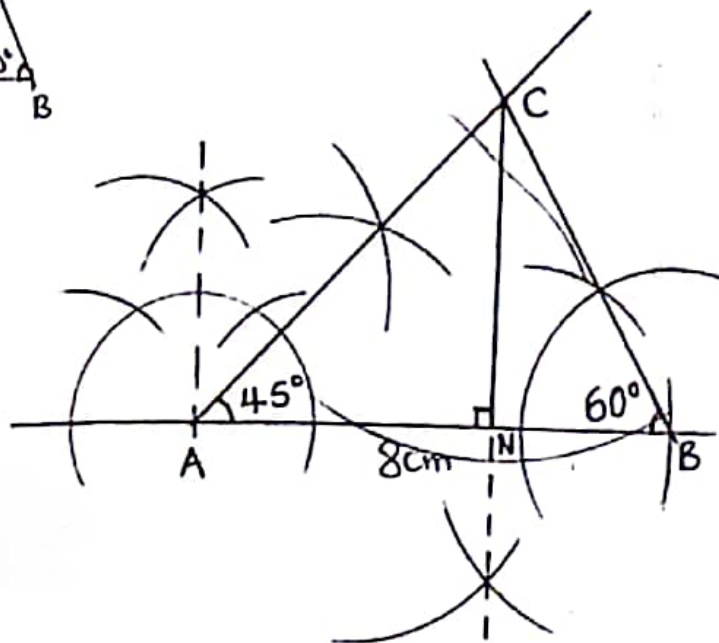
Sketch.

29. Nekesa was given a task of transplanting a group of seedlings by Tr. Stephen. She grouped them in **6s** and **1** remained. When she decided to group them in **5s** 4 seedlings remained. Her friend Wabwire advised her to group them in **7s** and no seedling remained.

What could be the least number of seedlings Nekesa received from Tr. Stephen? *(04 marks)*

1 (finite 6)

$= \{1, 7, 13, 19, 25, 31, 37, 43, (49) 55...\}$

B_1 for 49 in finite 6

4 (finite 5)

$= \{4, 9, 14, 19, 24, 29, 34, 39, 44, (49) 54,...\}$

B_1 for 49 in finite 5

B_1 for 49 in finite 7

0 (finite 7)

B_1 for 49 seedlings

$= \{0, 7, 14, 21, 28, 35, 42, (49) 56,...\}$

Nekesa received 49 seedlings from Tr. Stephen

30. After spending $\frac{3}{5}$ of his profit, David remained with sh. 75,000. What was ¼ of his profit at the beginning? (04marks)

$1 - \frac{3}{5}$

$\frac{5}{5} - \frac{3}{5}$

$\frac{5 - 3}{5}$

$\frac{2}{5}$

B_1 for $\frac{2}{5}$

B_1 for relating $\frac{2}{5}$ to $Sh. 75000$

$Sh. 75000 \div \frac{2}{5}$

$Sh\ 75000^{37500} \times \frac{5}{2}$

B_1 for Sh. 187500

Sh 37500 × 5

A_1 for Sh. 46,875

Sh. 187500

$Sh\ 187500 \times \frac{1}{4}$

Sh. 46,875

31. (a) Change 152ₛᵢₓ to decimal base. (02marks)

6^2	6^1	6^0
1	4	2

B_1 for correct multiplication

A_1 for 68ₜₑₙ

$(1 \times 6^2) + (5 \times 6^1) + (2 \times 6^0)$

$(1 \times 6 \times 6) + (5 \times 6) + (2 \times 1)$

$36 + 30 + 2$

$= \underline{68}_{ten}$

(b)   Express 123_{four} as a binary base number.   (03marks)

4^2	4^1	4^0
1	2	3

$(1\times4^2) + (2\times4^1) + (3\times4^0)$

$(1\times4\times4) + (2\times4) + (3\times1)$

$16 + 8 + 3$

$=27_{ten}$

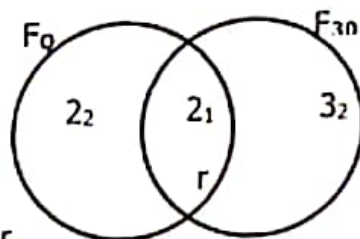| B	N	R
2	27	1
2	13	1
2	6	0
3	3	1
	1	

B_1 for 27_{ten}

B_1 for the table

A_1 for 11011_{two}

$=11011_{two}$

32.   The Venn diagram below shows the prime factors of Q and 30. Use it to answer the questions that follow.

(a)   Find the value of r.   (02marks)

$F30 = \{2, r, 3_2\}$

$30 = 2\times r\times3$

$30 = 2\times3\times r$

$30 = 6r$

$\dfrac{30^5}{6} = \dfrac{6r}{6}$

$5=r$

$\underline{r=5_1}$

B_1 for finding the unknown and correct multiplication.

A_1 for $r=5_1$

reject r=5

(b)   Work out the LCM of **Q** and **30**.   (03marks)

$L.C.M = (2_2, 2_1, 5_1, 3_2)$

$L.C.M = 2\times2\times5\times3$

$L.C.M = 4\times15$

$\underline{L.C.M = 60}$

B_1 for finding the union set.

B_1 for correct multiplication.

A_1 for L.C.M = 60

END

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