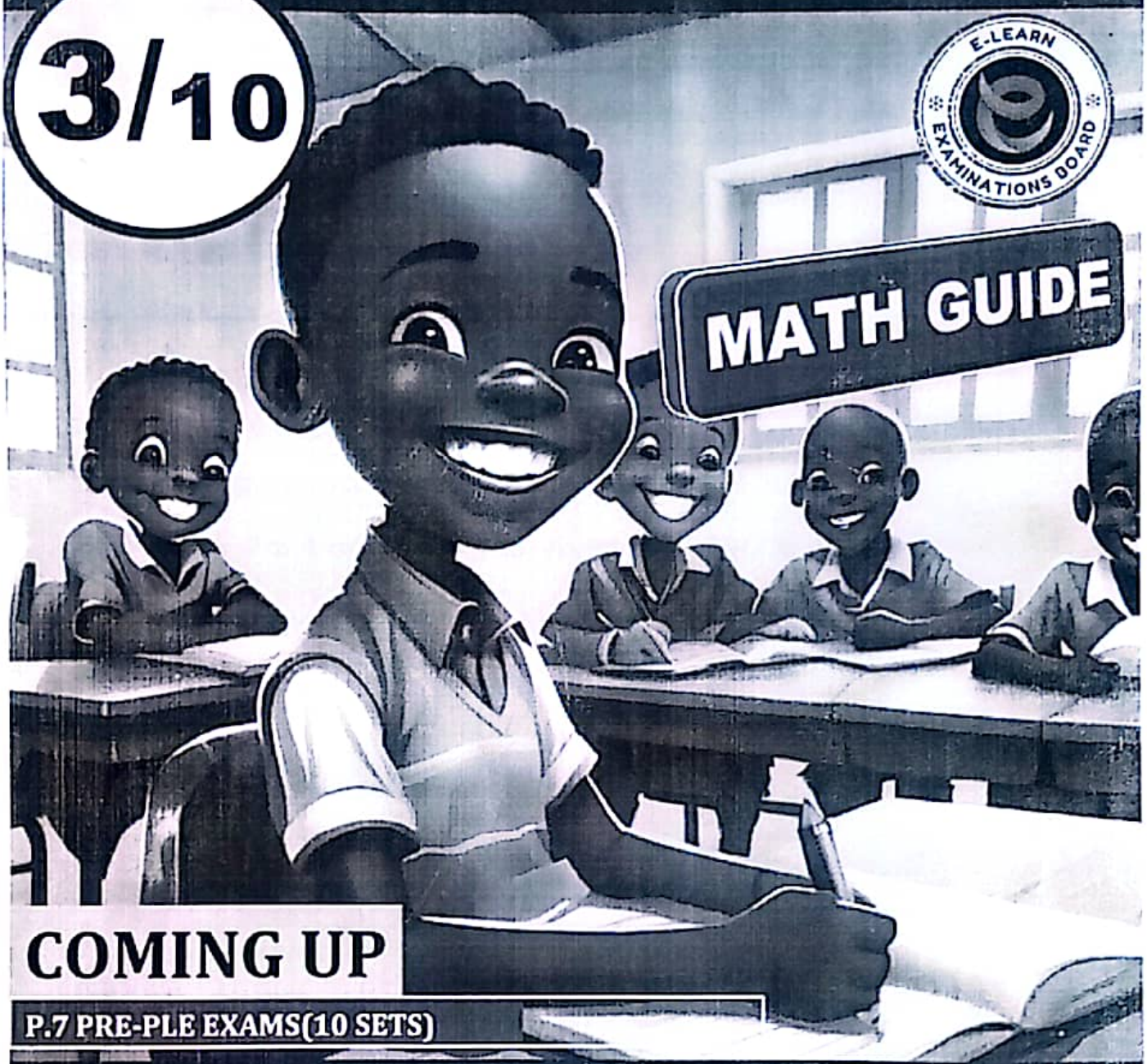
PRE PLE 2024

3/10



COMING UP

P.7 PRE-PLE EXAMS(10 SETS)

NAME: .....

SCHOOL: .....

0780-438054 0708-43805

24. 2/2+2/2

SECTION A: 40 MARKS

Answer all questions in this section

Questions **1** *to* **20** *carry* **2** *marks each*

1. Work out: 405 - 289

   $4^{3}\ {}^{1}0^{9}\ {}^{1}5$

   2 8 9

   1 1 6

   B_2 for correct answer

2. Write 490,092 in words.

   Four hundred ninety thousand ninety-two

3. Simplify: 7mn - 7m - n – mn + m.

   7mn – 7m – n – mn + n

   Collecting like terms ***B_1 for collecting like terms***

   7mn – mn – 7m + m – n ***B_1 for simplifying the final answer***

   6mn – 6m – n

4. Given D = (4, 0, 5, 8). List all proper subsets of D.

   D ={4, 0 , 5, 8}

   {4}, {0}, {5}, {8}, {4, 0}, {4, 5}, {4, 8}, {0,5}

   {0, 8}, {0, 5}, {5, 8}, {4, 0, 5}, {4, 0, 8}, {4, 5, 8}

   {4, 0, 8}, {4, 5, 8}, {0, 5, 8}, {4, 0, 5, 8}

   B_1 for starting with one member subset.

   A_1 for simplify 15 proper subsets

   ~~*Reject if the empty set is not included*~~

5. Find the square root of the next number in the sequence;

   36, 49, 64, 81, **100**

   +13 + 15 + 17 + 19

Or

B_1 for correct pattern leading to 100

B_1 for the square root of 100 = 10

36, 49, 64, 81, **100**

(6×6) (7×7) (8×8) (9×9) (10×10)

Square root of 100 = 10

6. Express 0.1777777..... as a common fraction.

Let the fraction be y

Y = 0.1777..... (i)

Y × 10 = 0.1777 × 10

10y = 1.777 ... (ii)

B_1 for correct equation

B_1 for $\frac{8}{45}$

Accept $\frac{-1}{-10}$ reduced to the lowest terms

Subtract (i) from (ii)

10y = 1.777

- Y = 0.177

9y = 1.600

$$\frac{9y}{9y} = \frac{16}{10} \div \frac{9}{1}$$

$$y = \frac{16}{10} \times \frac{1}{9}$$

$$y = \frac{8}{45}$$

7. Precious slept at 10:15 p.m. and woke up after 2 hours and 40 minutes. What time did she wake up in 24-hour clock system?

10 : 15pm

+2 : 40

12: 55am

B_1 for **12: 55am**

A_1 for 0055 **hours**

Converting to 24 hours

0055 hours

Reject if 12:55 has the unit of p.m

8. The temperature in Nevada at 7:00 a.m. was -6°c. It increased to 4°c. What was the increase in temperature?

Increase in temp = new – initial

= 4° C – (-6° C)
=4° C + 6° C
= $^{+}$10°C

B_1 for correct simplifying of signs

A_1 for $^{+}$10°C

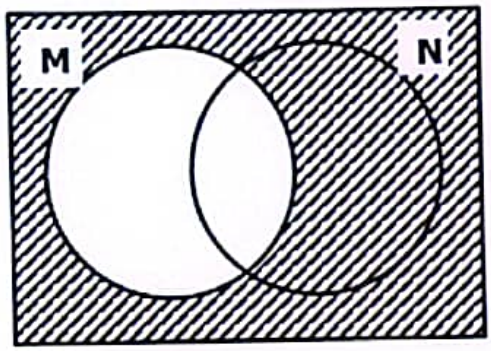
9. Use tallies to represent the quotient of 36 and 3.

36 ÷ 3
= 12
𝍸 𝍸 ||

B_1 for correct division

A_1 for accurate tallies

10. Study the diagram below and describe the shaded region.



B_2 for correct region identified

(M)' or M complement

11. A sachet of gorillos weighed 12mg. What is its mass in decagrams?

$1\,Dg = 100mg$

$10,000mg = 1Dg$

$1mg = \left(\frac{1}{10,000}\right)Dg$

$12mg = \left(\frac{1}{10,000}x12\right)Dg$

$= \left(\frac{12}{10,000}\right)Dg$

= 0.0012Dg

B_1 for $1\,Dg = 100mg$

A_1 for answer

12. If today is a Tuesday, what day of the week will it be 48days after tomorrow?

S M T W T F S
0 1 2 3 4 5 6
Days + days = - (finite 7)
3 + 48 = - (finite 7)
51 ÷ 7 = 7 r 2
2 stands for Tuesday
So it will be Tuesday.

B_1 for following the rules of finite system

B_1 for correct answers

NB: accept the use of calenders.

Find the sum of 679 and the smallest 3-digit number formed using digits 6, 0, 8.

Smallest – 608

Sum = 6 7 9
6 0 8
1287

B_1 for correct numbers formed

B_1 for 1282

14. Raymond exercises every 12days and Moses every 8 days. Raymond and Moses both exercised today. How many days will it be until they exercise together again?

Number of days = LCM

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

=2×2×2×2×3
= 8×3
= 24

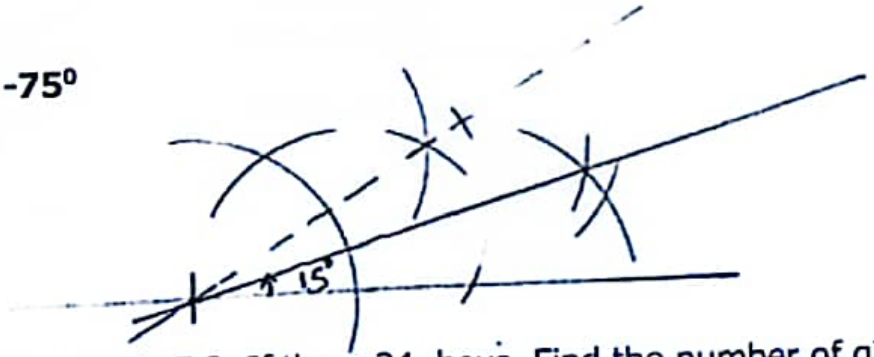
B_1 for correct method

B_1 for correct answer 24
Accept listing multiples

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

Complement of 75^0 = 90^0 -75^0

=15^0



16. In a P.7 class, the ratio of girls to boys is 5:3. If there 24. boys. Find the number of girls in P.7

girls	Boys	Total
5	3	8

M_1 for correct working

B_1 for correct answer 40 girls

3 parts = 24
1 part = $\frac{24}{3}$
5 parts = $\frac{24}{3} \times 5$
= 40
There are 40 girls in the class

17. Express 0.00643 in standard form.

0.00643 × 10 = 00.0643
00.0643 × 10 = 000.643
000.643 × 10 = 0006.43
=6.43 × 10^{-3}

M_1 for correct method

A_1 for accurate answer

~~*reject if the learner divides*~~

18. A canteen attendant bought 2 dozen of rulers at sh. 24,000. She later sold each ruler at sh. 1500. How much profit did she make?

Total cost price of rulers = sh.24,000
selling price = (2 × 12) × sh 1500
= sh.36,000
Profit = sh. 36,000
- sh. 24,000
Sh. 12,000

B_1 for correct working

A_1 for correct answer **Sh. 12,000**

19. A car covered a distance of 660cm in **five** revolutions.
Calculate the diameter of the car wheel. (take $\pi = \frac{22}{7}$)

$$Circumference = \frac{length}{revolutions}$$

$$Circumference = \frac{660cm}{5}$$

Circumference – 132cm
But c = πD

$$7 \times 132cm = \left(\frac{22}{7} \times D\right) \times 7$$

$$\frac{7 \times 132cm}{22} = \frac{22D}{22}$$

42cm = D
Diameter = 42cm

M_1 for correct formula

B_1 for correct answer

20. In a basket of apples, 12% of them are rotten and 88 are in good condition. Find the total number of apples in the basket.

Rotten	Good	Total
12%	88%	100%

88% = 66
1 % = $\frac{66}{88}$
100% = $\frac{66^{3}}{88_{22}} \times \frac{100^{25}}{}$
= 3×25
=75 apples

M_1 for correct working leading to the final answer

A_1 for **=75 apples**

Accept any other proper method

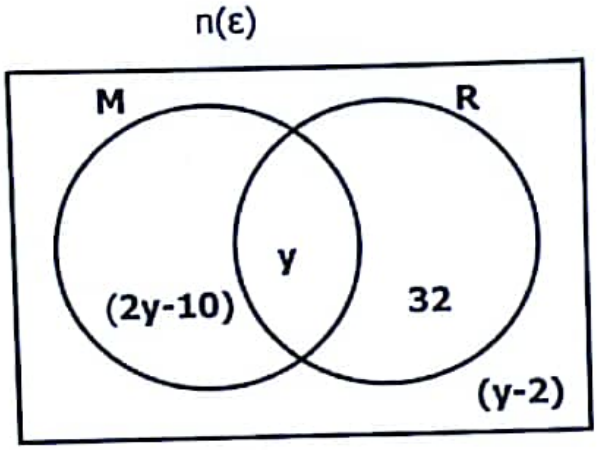
SECTION B: 60 MARKS

Answer all questions in this section

Marks for each question are indicated in the brackets

21. At a graduation party, 32 people like Rice only, y people liked both Rice (R) and Matooke (M), (2y-10) people like Matooke but not Rice, while (y-2) do not like any of the two foods.

(a) Use the information above to complete the Venn diagram below. *(03 Marks)*



B_1 for each correct filling.

(b) Given that those who like Matooke only are more than those who like Rice only by 38, find the value of y. *(02 marks)*

$(2y - 10) - 32 = 38$

$2y - 10 - 23 = 38$

$2y - 42 + 42 = 38 + 42$ *B_1 for correct equation*

$\frac{2y}{2} = \frac{80^{40}}{2}$ *B_1 for the value of y*

Y=40

22. A trader borrowed money from centenary bank at an interest rate 10% per annum for 2years.

(a) How much did he borrow if he paid an interest of sh.84,000? *(02 Marks)*

SI = P × T × R

$Shs.84,000 = P \times 2 \times \frac{10}{100}$ *M_1 for correct formula*

$10 \times sh\,84000 = \frac{2P}{10} \times 10$ *A_1 for correct substitution and answer* shs 420,000

$\frac{sh840000^{420000}}{2} = \frac{2p}{2}$

Principal = Shs 420,000

(b) Calculate the amount he paid after 2 years. *(02 Marks)*

Amount = principal + SI
= shs 420,000 *B_1 for correct working*
+shs 84,000 *B_1 for correct answer*
Shs 504,000

23. (a) Solve for y: 4(2y+3)31-3(y-1) *(03 Marks)*

$4(2y + 3) = 31 - 3(y - 1)$
$4 \times 2y + 4 \times 3 = 31 - 3xy - 3x - 1$
$8y + 12 = 31 - 3y + 3$
$8y + 3y + 12 = 31 - 3y + 3y + 3$
$11y + 12 = 31 + 3$
$11y = 12 - 12 = 34 - 12$
$\frac{11y}{11} = \frac{22}{11}$
$Y = 2$

M_1 Check the learners work to see the correct removing of the brackets

B_1 for correct continuity of the correct working

A_1 for correct answer y=2

(b) At Rania's 12th birthday her father was 50 years old. After how many years will the father be thrice as old as the daughter? *(03 Marks)*

let the time to come be x

Rania	Father
12	50
3(12+x)	50+x

$3 \times 12 + 3 \times x = 50 + x$

$36 + 3x = 50 + x$

$36 - 36 + 3x = 50 - 36 + x$

$3x - x = 14 + x - x$

$\frac{2x}{2} = \frac{14^7}{2}$

$X = 7$ years

M_1 for correct equation

B_1 for correct working

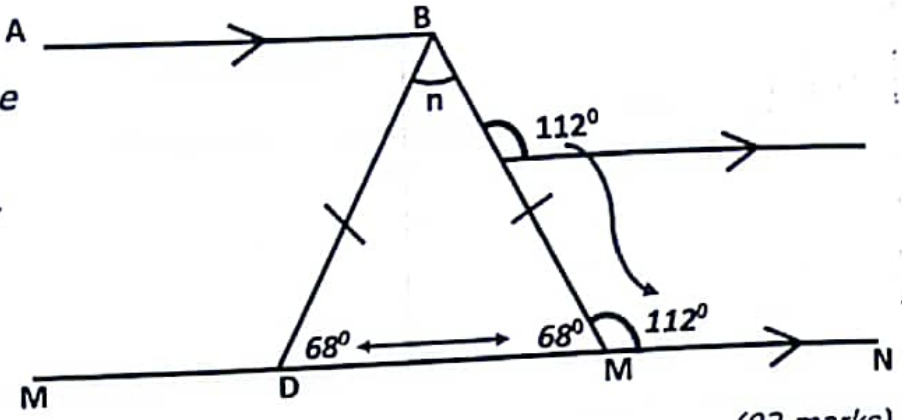
A_1 for 7 years

24. Study the diagram below and use the information given to answer the questions that follow.

Encourage learners to put necessary information in the diagram

B_1 for correct realisation of angles

B_1 for $n = 44^0$



(02 marks)

(a) Find the value of angle n.

$n+68^\circ+68^\circ = 180^\circ$

$n+136^\circ - 136^\circ = 180^\circ - 136^\circ$

$\underline{n = 44^0}$ *(02 marks)*

(b) Find the size of angle marked

(i) BDM

$BDM = 44^0 + 68^0$

$= \underline{112^\circ}$

M_1 for addition of angles

B_1 for 112°

(ii) $\frac{1}{4}$ of BMN

$\frac{1}{4} \times 112^{28}$

$= \underline{28^\circ}$

B_1 for 28°

(02 Marks)

25. (a) Convert 18km/hr. to metres per second.

1km = 1000m

1 hr = 3600 sec

$18km/hr = \frac{(18^1 \times 1000)}{36_200}$

$\underline{=5m/sec}$

M_1 for leading statements

B_1 for correct answer with units

(b) A bus driver covered a distance of 200km at an average speed of 80km/hr. If he reached her destination at 4:05p.m., At what time did he start the journey?

(03 Marks)

Distance	Speed	Time
200km	80km/hr	$T = \frac{D}{5}$

M_1 for correct formula leading to $2\frac{1}{2} hrs$

$Time = \frac{200km}{80km/hr}$

B_1 for correct subtraction of time.

$= \frac{5}{2}$

$= 2\frac{1}{2} hrs$

A_1 *for* **1:35pm**

~~*Reject if pm is not seen*~~

4^3 : 05pm

-2 : 30

1:35pm

26. The table shows the rate at which Bamuda forex bureau buys and sells United States dollars and Kenya shillings in Uganda shillings. Use it to answer questions that follow.

Currency	Buying rate	Selling rate
1 Us dollar	Ug sh 3500	Ug shs 3650
1 ksh	Ug sh 30	Ug shs 32

(a) Abigail had Ksh. 18250 and bought a fridge using US dollars. How many US dollars did she pay for the fridge? *(03 Marks)*

B_1 *for correct equation*

$\frac{18250 \times 30}{3650}$ B_1 *for* **correct division**

50×3=150 dollars B_1 *for* **correct answer**

(b) Jason had US dollars 400. He exchanged the dollars for Uganda shillings and bought a home theater sh. 1,035,000. What was his balance in US dollars? *(03 Marks)*

400×sh 3500

=sh 1,400,000 B_1 *for multiplication*

Balance = sh 1,400,000

-sh 1, 035,000 B_1 *for* **correct subtraction**

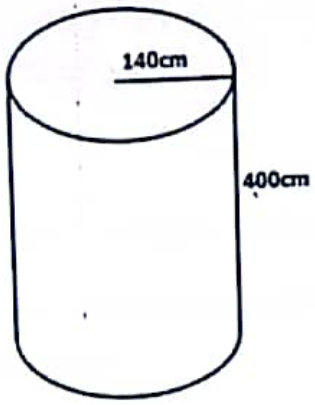
Sh 0365,000 B_1 *for* **correct answer 100 dollars**

$\frac{Ugsh365000}{ugsh3650}^{100}$

= 100 dollars

Mr. Katiko has a juice tank at his factory as shown below. Study it carefully and use it to answer questions that follow.

(a) Calculate the capacity of the tank when it is full of juice. *(03 Marks)*



Volume of tank

V = base area × height

$= \frac{22}{7} \times 140cm \times 140cm \times 400cm$

V = 24,640,000cm³

Converting to litres

$\frac{24,640,000cm^3}{1000cm^3}$

= 24640 litres

When ¼ full *B_1 for volume*

$\frac{1}{4} \times 24640litres$ *B_1 for* **converting volume to litres**

= 6160 litres *B_1 for* **correct answer**

(b) If juice from the tank is packed in 20 litre jerrycans for selling, find the number of jerrycans which were obtained from the juice tank? *(02 Marks)*

when completely full *M_1 for correct division*

$\left(\frac{24640}{20}\right) jerrycans$ *A_1 for* **1232 jerrycans**

= 1232 jerrycans

28. (a) Convert 223_{four} to base six. *(02 Marks)*

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

$(2 \times 4^2) + (2 \times 4^1) + (3 \times 4^0)$

$(2 \times 4 \times 4) + (2 \times 4) + (3 \times 1)$

$32 + 8 + 3$ *M_1 for converting to base ten*

$= 43_{ten}$ *A_1 for* 111_{six}

Now to base six

B	N	R
6	43	1
6	7	1
	1	

$= 111_{six}$

(b) Work out $123_{five} \times 23_{five}$ *(03 Marks)*

$1\ 2\ 3_{five}$
$\times\ 2\ 3_{five}$
$1\ 3\ 6\ 9$
$+\ 2\ 4\ 6$
$3\ 4\ 3\ 4_{five}$

Or

$1\ 2\ 3$
$\times\ 2\ 3$
$4\ 2\ 4$
$3\ 0\ 1$
$3\ 4\ 3\ 4_{five}$

$7 \div 5 = 1\ r\ 2$
$6 \div 5 = 1\ r\ 1$
$9 \div 5 = 1\ r\ 4$

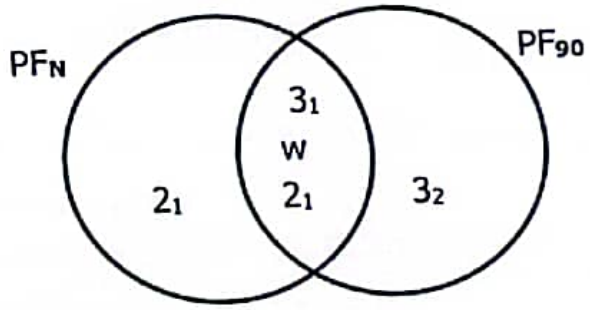
$3 \times 3 = 9$
$9 \div 5 = 1\ r\ 4$
$13 \div v5 = 2\ r\ 3$
$9 \div 5 = 1\ r\ 4$

M_1 for correct multiplication

B_1 for intensive regrouping in base five

A_1 for $3\ 4\ 3\ 4_{five}$
~~*Reject if the base is not written*~~

9. The Venn diagram below shows the prime factors of N and 90.



(02 marks)

(a) Find the value of w.

$W \times 2 \times 3 \times 3 = 90$
$W \times 18 = 90$
$\frac{W \times 18}{18} = \frac{90^{10^5}}{18_2}$
$W = 5_1$

B_1 for correct division

B_1 for $W = 5_1$

(02 marks)

(b) Find the HCF of N and 90.

$HCF = 3 \times 2 \times 5$
$= 6 \times 5$
$= 30$

B_1 for correct working

B_1 for 30

30. Candidates sat for a mathematics test and performed as shown on the table below.

Number of candidates	///	/	//	///
Marks scored	60	90	40	**S**

(a) How many candidates sat for the test? *(01 mark)*

3 + 1 + 2 + 3

B_1 for 9 candidates

= 9 candidates

(b) If the mean mark was 50, find the value of **S**. *(02 marks)*

$$Mean = \frac{sum\ of\ data}{number\ of\ data}$$

$$50 = \frac{(60 \times 3) + (90 \times 1) + (40 \times 2) + (m \times 3)}{9}$$

$$50 = \frac{180 + 90 + 80 + 3m}{9}$$

***B_1 for* correct working**

A_1 for $S = 33\frac{1}{3}$

$$50 \times 9 = \frac{350 + 3m}{9} \times 9$$

$$450 = 350 + 3m$$

$$450 - 350 = 350 - 350 + 3m$$

$$100 = 3m$$

$$\frac{100}{3} = \frac{3m}{3}$$

$$S = 33\frac{1}{3}$$

(c) How many candidates scored above the average mark? *(01 mark)*

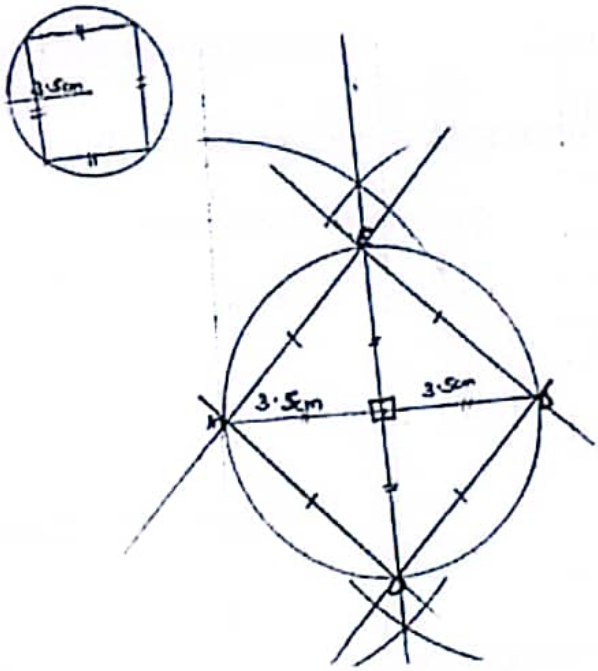
3 + 1 = 4

***B_1 for* 4**

4 candidates

31. (a) Using a ruler, a pencil and a pair of compasses only construct a quadrilateral **MODE** inside a circle of radius 3.5cm *(04 marks)*

Sketch



S_1 for sketch

C_1 – for arcs

L_1 – for radius

J_1 – for joining points

(a) Calculate the perimeter of the quadrilateral formed. *(02 marks)*

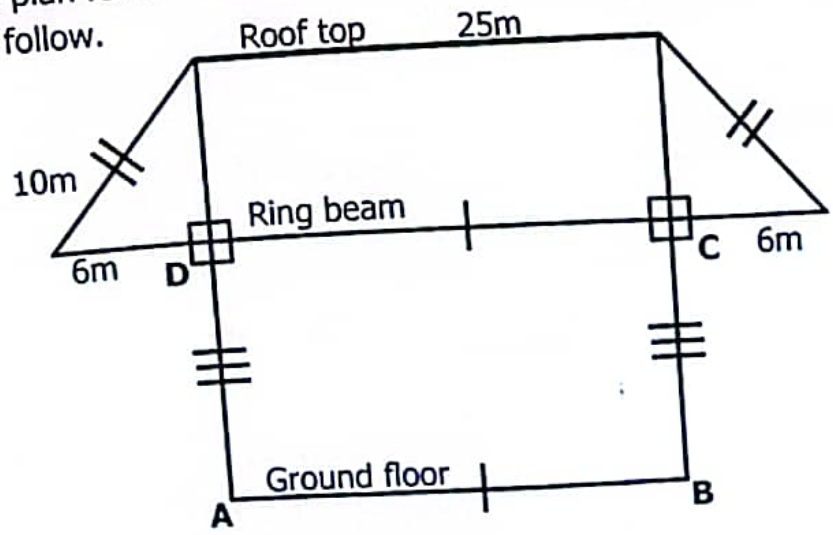
(5+ -1)

Perimeter = 4S

= 4X5cm

= <u>20cm</u>

32. Below is house plan for Mr. Odongo's house. Study it carefully and use it to answer the questions that follow.



(a) How high is the top of the roof from the ring beam? *(02 marks)*

$C^2 = a^2 + b^2$

$(cxc) = (axa) + (bxb)$

$(10x10) = (6x6) + b^2$

$100 = 36 + b^2$

$100-36 = 36-36+ b^2$

$\sqrt{64} = \sqrt{b2}$

$8m = b$

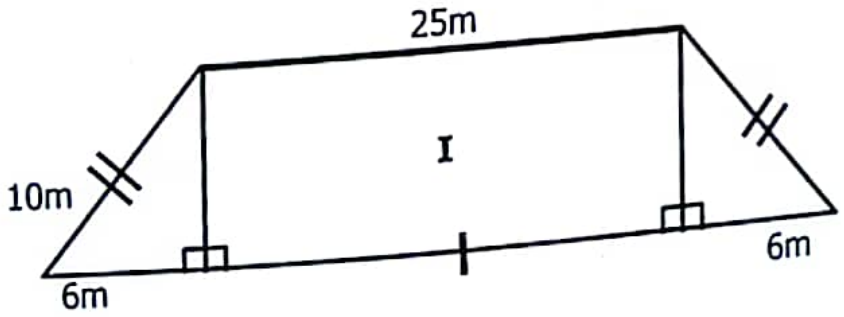
B_1 for Pythagoras theorem

B_1 for correct working

A_1 for 8m

The roof top is 8m high from the ring beam

(b) If **AB** is half of **BC**, find the total area of the house plan to be constructed. *(04 marks)*



M_1 for correct working leading to $248m^2$

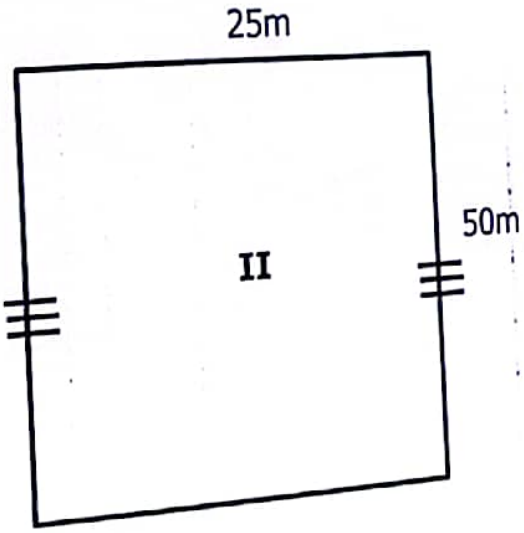
M_1 for correct working leading to $1250m^2$

AREA I $= \frac{1}{2} X\ h(a+b)$

AREA I $= \frac{1}{2} X\ 8m(25m + 37m)$

AREA I $= 4m\ X\ 62m$

AREA I $= 248m^2$



AREA II = LXW

AREA II = 25m X 50m

AREA II = 1250m²

A_1 for correct answer after summation

Total Area = 1 2 5 0m²

+ 2 4 8m²

1 4 9 8 m²

END