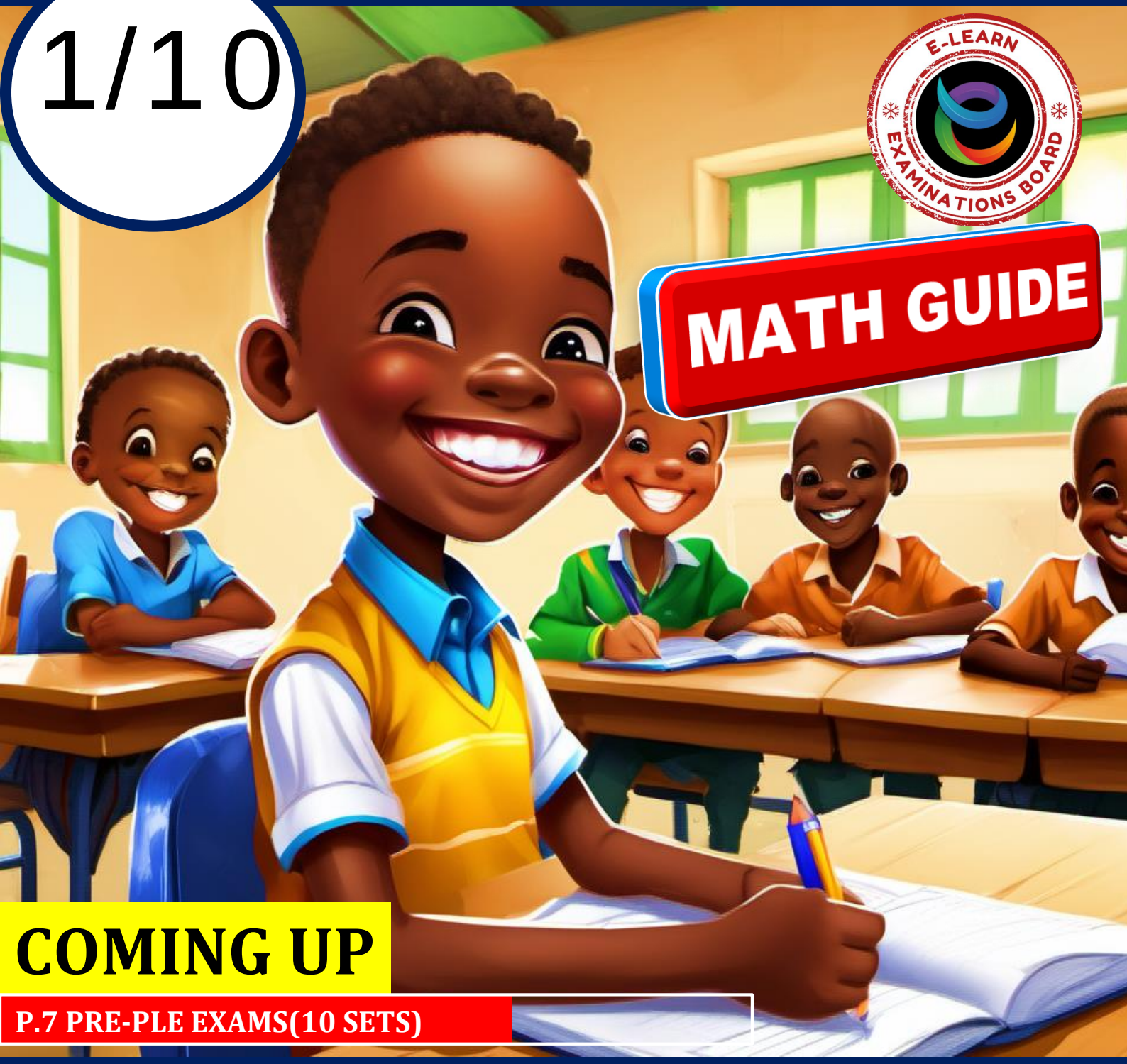
PRE PLE 2024

1/10



COMING UP

P.7 PRE-PLE EXAMS(10 SETS)

NAME: .....

SCHOOL: .....

0780-438054 0708-43805

SECTION A: 40 MARKS

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

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

1. Work out: $\frac{1}{5} + \frac{3}{5}$

$\frac{1}{5} + \frac{1}{5} = \frac{1+3}{5} = \frac{4}{5}$

B_2 on sight

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2. Write 57 in Roman numerals.

57= 50+7

50	7
L	VII

57 = LVII

M_1 for converting

A_1 for 57 = LVII

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3. Work out the multiplicative inverse of 3.

Let the multiplicative inverse be y

$3 \times y = 1$

$3y = 1$

$\frac{3y}{3} = \frac{1}{3}$

$y = \frac{1}{3}$

M_1 for $3 \times y=1$

A_1 for $y = \frac{1}{3}$

Reject without working

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4. Simplify: 5h – 10h + 8h

(5h – 10h) + 8h
– 5h + 8h
3h

(5h + 8h) – 8h
13h – 8h
3h

M_1 for collecting like terms
A_1 for 3h

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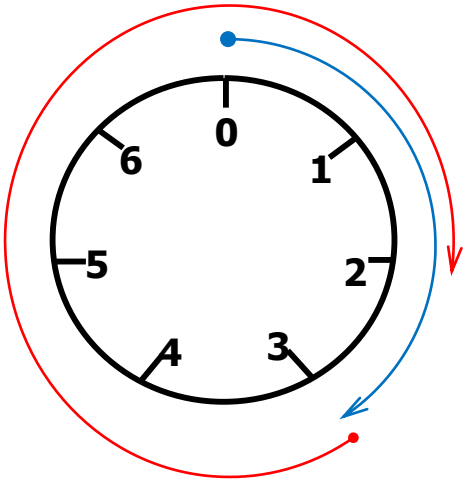
5. Mr. Opio used sh 9,600 to buy some books. If each book was bought at sh 1,200, how many books did he buy?

$\left(\frac{sh.9600}{sh.1200}\right) books$

8 books

M_1 for correct division
A_1 for 8 books

6. Show 3+6 (finite 7) on the dial below.



B_2 for the correct diagram

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7. What numeral is expanded to give; $(5\times100) + (9\times10^{-2})$?

$(5\times100) + (9\times10^{-2})$
$500 + 9 \times \frac{1}{10}2$
$500 + \frac{9}{10\times10}$
$500 + \frac{9}{100}$
$500 + 0.09$

$$\begin{array}{r} 500.00 \\ +\ \ 0.09 \\ \hline 500.09 \end{array}$$

M_1 for correct working
A_1 for 500.09

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8. How many 250 gramme packets can be obtained from 2 kilogrammes of rice?

1 kg = 1,000 g
2 kg = 2 × 1,000 g
2 kg = 2,000 g

Number of packets
$(\frac{2{,}000\ g}{250\ g})$ packets
8 packets

M_1 for 2,000 g
A_1 for 8 packets

---

9. Round off **3742** to the nearest hundreds.

Th	H	T	O
3	7	4	2

Round down to 0
RPV (100)

Rounding number = 100×0 = 0

$$\begin{array}{r} 3700 \\ +\ \ 0 \\ \hline 3700 \end{array}$$

Therefore, 3742≈3700

M_1 for adding 3700+0
A_1 for 3742≈3700

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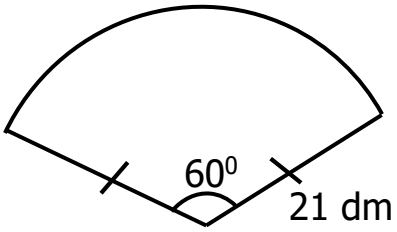
10. Using distributive property, work out (79 ÷ 5) – (19 ÷ 5)

(79÷5) – (19÷5)
(79 – 19)÷5
60÷5
12

M_1 for (79 – 19)÷5
A_1 for 12
Strictly mark distributive property

11. Find the area of the given sector. (Take $\pi = \frac{22}{7}$)



M_1 for correct working

A_1 for $231dm^2$

Area = <sector $\times \pi r^2$

$= \frac{60}{360} \times \frac{22}{7} \times 21\text{ dm} \times 21\text{ dm}$

$= \frac{1}{6} \times \frac{22}{1} \times 3\text{ dm} \times 21\text{ dm}$

$= \frac{1}{3} \times \frac{11}{1} \times 3\text{ dm} \times 21\text{ dm}$

$= 1 \times 11 \times 1\text{ dm} \times 21\text{ dm}$

$= 231\text{ dm}^2$

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12. Three men can build a hut in 20 days. How many more men are needed to build the same hut in 12 days working at the same rate?

20 days $\Rightarrow$ 3 men

1 day $\Rightarrow$ (20 $\times$ 3) men

1 day $\Rightarrow$ 60 men

12 days $\Rightarrow \frac{60}{12}$ men

12 days $\Rightarrow$ 5 men

More men

(5 – 3) more men

2 more men

M_1 for 12 days $\Rightarrow$ 5 men

A_1 for 2 more men

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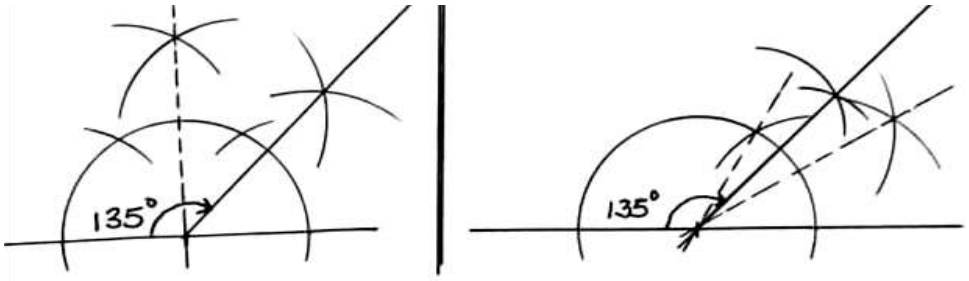
13. Using a ruler and a pair of compasses only, construct an angle of 135^0 at point **R**.



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14. Solve $(12_{three})^2$

$(12_{three})^2 = 12_{three} \times 12_{three}$

$$\begin{array}{r} 1\ \ 2_{three} \\ \times\ 1\ \ 2_{three} \\ \hline 1\ \ 0\ \ 1 \\ +\ 1\ \ 2 \\ \hline 2\ \ 2\ \ 1_{three} \end{array}$$

$2 \times 2 = 4$

$4 \div 3 = 1$ rem 1

$2 \times 1 = 2$

$2 + 1 = 3$

$3 \div 3 = 1$ rem 0

M_1 for correct multiplication

A_1 for correct answer

15. A trader sold a watch at sh 35,000 and made a loss of sh 12,000. Find the price at which he bought the watch.

B.P = S.P + Loss

	sh	3	5	0	0
0					

M_1 for adding
A_1 for sh 47,000

Encourage learners to always add vertically.
Reject answers with the symbol /=

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16. If $2^{g+1} = 16$, find the value of g.

$2^{g+1} = 16$

2	16
2	8
2	4
2	2
	1

$2^{g+1} = 2^4$
$g+1 = 4$
$g + 1 - 1 = 4 - 1$
$g = 3$

M_1 for $2^{g+1} = 2^4$
A_1 for g=3
Encourage the learner to factorize 16 as part of his/her work

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17. Work out the median of p+2, p+4, p+1 and p+8.

(p+1), (p+2), (p+4), (p+8)

Median $= \frac{p+2+p+4}{2}$
$= \frac{2p+6}{2}$
$= \frac{2p}{2} + \frac{6}{2}$
$= p + 3$

M_1 for $\frac{p+2+p+4}{2}$
A_1 for $p + 3$

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18. Two numbers 30 and y are in the ratio of 3:1 respectively. Find the GCF of the numbers.

$30:y = 3:1$
$\frac{30}{y} = \frac{3}{1}$
$y \times \frac{30}{y} = \frac{3}{1} \times y$
$30 = 3y$
$\frac{30}{3} = \frac{3y}{3}$
$10 = y$
y = 10

2	30	10
5	15	5
	3	1

GCF = 2×5
GCF = 10

M_1 for y = 10
A_1 for GCF = 10

19. 20% of a number is equal to a quarter of 40. Find the number.

Let the number be a
20% of a = $\frac{1}{4}$ of 40
$\frac{20}{100} \times a = \frac{1}{4} \times 40$
$\frac{a}{5} = 10$
$5 \times \frac{a}{5} = 10 \times 5$
a = 50

M_1 for equation
A_1 for a = 50

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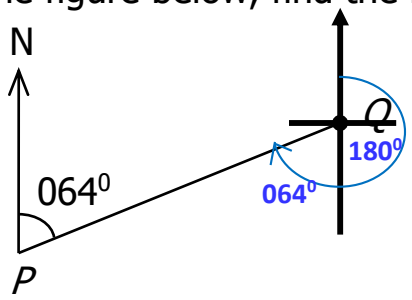
20. In the figure below, find the bearing of *P* from town *Q*.



180^0
$+ 064^0$
244^0

M_1 for adding
A_1 for 244^0

SECTION B: 60 MARKS

*Answer **all** the questions in this section.*
Marks for each question are indicated in brackets.

21. At a party attended by 240 guests. 60% were served chicken and the rest were served fish.

(a) Find the percentage of guests that were served with fish. *(02 marks)*

Let the percentage be y.
y + 60% = 100%
y + 60%-60% = 100% - 60%
$y = 40^0$

or
100% – 60% = 40%

M_1 for correct working
A_1 for 40%
Reject answers without %

(b) How many more guests were served with chicken than fish? *(03 marks)*

Chicken
$\frac{60}{100} \times 240$ = 144 guests
Fish
$\frac{40}{100} \times 240$ = 96 guests
More guests
144 – 96 = 48 more guests

Method 2
Difference in perecentage
60% – 40% = 20%
Number of guests
$\frac{20}{100} \times 240$ = 48 guests
48 more guests

B_1 for 144 guests (chicken)
B_1 for 96 guests (fish)
A_1 for 48 more guests

22. The average of three consecutive even numbers is 26. If the first number is y, find the numbers. *(04 marks)*

Method 1

1st no	2nd no	3rd no	Mean
y	y+2	y+4	26

$$\text{Average} = \frac{Sum\ of\ data}{Number\ of\ data}$$

$$26 = \frac{y+y+2+y+4}{3}$$

$$26 = \frac{3y+6}{3}$$

$$3\times 26 = \frac{3(3y+6)}{3}$$

$$78 = 3y+6$$

$$78 - 6 = 3y + 6 - 6$$

$$72 = 3y$$

$$\frac{72}{3} = \frac{3y}{3}$$

$$y = 24$$

Method 2

Sum of numbers = $26\times 3 = 78$

1st no	2nd no	3rd no	Mean
y	y+2	y+4	26

$$y + y + 2 + y + 4 = 78$$

$$3y + 6 = 78$$ *M_1 for correct equation*

$$3y + 6 - 6 = 78 - 6$$ *M_1 for y = 24*

$$3y = 72$$ *B_1 for 26*

$$\frac{3y}{3} = \frac{72}{3}$$ *B_1 for 28*

$$y = 24$$

1st no: y = 24

2nd no: y + 2 = 24 + 2 =26

3rd no: y + 4 = 24 + 4 = 28

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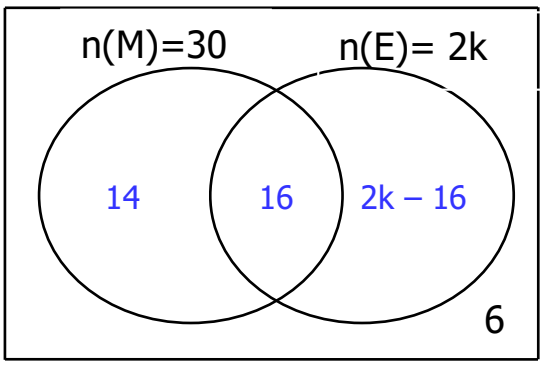
23. In a class of 40 pupils, 30 like Mathematics (M), 2k like English (E) and 14 like mathematics only while 6 like neither of the two subjects.

(a) Complete the Venn diagram below. *(03 marks)*



Both

30 – 14 = 16

B_1 for 16 in the intersection set

B_1 for 2k – 16 in set E – M

B_1 for 14 in set M – E

(b) Find the value of k. *(02 marks)*

$$30 + 2k - 16 + 6 = 40$$

$$30 + 6 - 16 + 2k = 40$$ *M_1 for correct equation*

$$36 - 16 + 2k = 40$$ *A_1 for k = 10*

$$20 + 2k = 40$$

$$20 - 20 + 2k = 40 - 20$$

$$2k = 20$$

$$\frac{2k}{2} = \frac{20}{2}$$

k = 10

24. Jane, Liz and Teo shared some apples in the ratio of 3:2:5 respectively. Both Jane and Teo shared a total of 112 apples.

(a) How many apples did Liz get? *(03 marks)*

Total Ratio = 3 + 2 + 5 = 10
Total Ration of Jane and Teo = 3 + 5 = 8
Fraction of Jane and Teo = $\frac{8}{10}$
Let the total number of apples be a.
$\frac{8}{10}\times a = 112$

$\frac{8a}{10} = 112$

$\frac{8a}{10}\times 10 = 112\times 10$
$8a = 1120$
$\frac{8a}{8} = \frac{1120}{8}$
$a = 140$

Liz's fraction is $\frac{2}{10}$
$\frac{2}{10}\times 140$ apples
28 apples
Therefore, Liz got 28 apples

M_1 for forming a correct equation

M_1 for obtaining the total number of apples

A_1 for 28 apples (Liz)

Accept other correct methods

(b) Given that every four apples were sold at sh 5,000, how much money would Jane earn from all her apples? *(03 marks)*

Jane apples are $\frac{3}{10}\times 14 = 42$

Cost of each apple is $\frac{\text{sh } 5{,}000}{4}$ = sh 1,250

Cost of 42 apples is sh 1,250×42 = sh 52,500

Therefore, Jane would earn sh 52,500

M_1 for Jane's number of apples
M_1 for the cost of one apple
A_1 for sh 52,500

25. (a) Find the least number of cakes that can be shares by 8 boys or 12 girls leaving a remainder of 3 cakes. *(02 marks)*

No. of cakes = LCM + Rem

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

No. of cakes = (2×2×2×3) + 3
= 24 + 3
= 27 cakes

M_1 for correct prime factorization
A_1 for 27 cakes

(b) Express 24 as a product of its prime factors. *(02 Marks)*

24 = 2×12
= 2×2×6
= 2×2×2×3

M_1 for correct prime factorization
A_1 24 = 2×2×2×3

26. (a) Express 2.333... as a rational number in its lowest terms. *(02 marks)*

Let the number be a.
a = 2.333… (1)
10×a = 10×2.333…
10a = 23.333… (2)

10a = 23.333… (2)
− a = 2.333…
9a = 21.000…

9a = 21
$\frac{9a}{9} = \frac{21}{9}$
a = $\frac{7}{3}$

M_1 for subtracting equation 2 – equation 1
A_1 for $a = \frac{7}{3}$

(b) Evaluate: $\frac{0.08 + 0.2}{0.9 - 0.5}$ *(03 marks)*

0.08
+ 0.20
0.28

0.9
− 0.5
0.4

M_1 for 0.28 ÷ 0.4
M_1 for simplifying
A_1 for 0.7

Reject $\frac{7}{10}$

0.28 ÷ 0.4
$\frac{28}{100} \div \frac{4}{10}$
$\frac{28}{100} \times \frac{10}{4}$
$\frac{7}{10}$ = 0.7

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27. (a) What angle is a ninth of its supplement? *(03 marks)*

Let the angle be n.
Its supplement = $180^0 - n$
n = $\frac{1}{9}$ of $180^0 - n$

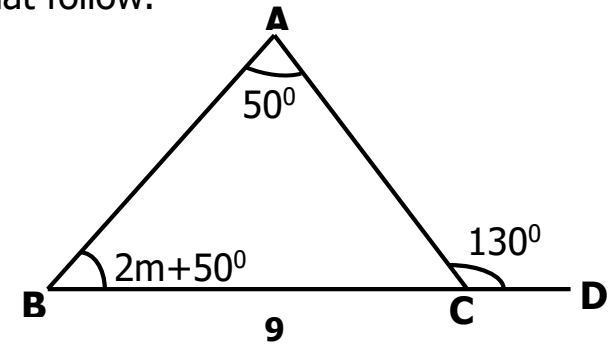
n = $\frac{1}{9} \times 180^0 - n$

n = $\frac{180^0 - n}{9}$

$9 \times n = 9(\frac{180^0 - n}{9})$
$9n = 180^0 - n$
$9n + n = 180^0 - n + n$
$10n = 180^0$
$\frac{10n}{10} = \frac{180}{10}$
$n = 18^0$

M_1 for supplement $(180^0 - n)$
M_1 for correct equation
A_1 18^0

(b) In the figure below, angle ABC = $2m+20^0$, angle BAC = 50^0 and angle ACD = 130^0. Study the figure and answer the questions that follow.



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(i) Calculate the size of angle ACB. *(01 mark)*

$<ACB = 180^0 - 130^0$ (supplementary angles)
$<ACB = 50^0$

B_1 for $<ACB = 50^0$

(ii) Find the value of m in degrees. *(01 mark)*

$2m + 50^0 + 50^0 = 130^0$
$2m + 100^0 = 130^0$
$2m + 100^0 - 100^0 = 130^0 - 100^0$
$2m = 30^0$
$\frac{2m}{2} = \frac{30}{2}$
$m = 15^0$

B_1 for $m = 15^0$
Accept other approaches

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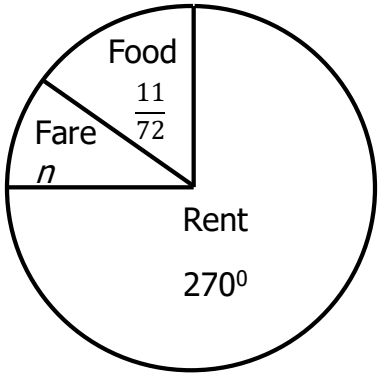
28. The pie chart below shows how Mr. Mbidde used his July salary. Study it and answer the questions that follow.



(a) Find the value of *n*. *(03 Marks)*

Sector for food in degrees
$\frac{11}{72} \times 360^0 = 55^0$

$n + 55^0 + 270^0 = 360^0$
$n + 325^0 = 360^0$
$n + 325^0 - 325^0 = 360^0 - 325^0$
$n = 35^0$

B_1 for food
M_1 for equation
A_1 for $n = 35^0$

(b) Given that Mr. Mbidde earns sh 450,000 as his monthly salary, how much did he spend on food? *(02 marks)*

$\frac{11}{72} \times$ sh 450,000
Sh 68,750

M_1 for correct working
A_1 for = sh 68,750

Or
$\frac{55}{360}$x sh 450,000
sh 68,750

(c) Express the value of rent as a ratio of the whole salary. *(01 mark)*

$\frac{270}{360} = \frac{27}{36} = \frac{3}{4}$ *B_1 for 3:4*

= 3:4

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29. A motorist started a journey of 109 km at 8:20 a.m. riding at 30 km/h. At 9:50 a.m., his motorcycle broke down and the repair took him half an hour. At what speed did the motorist ride after the repair if he reached his destination at 12:20 p.m.? *(04 marks)*

Speed = Remaining distance ÷ Time taken after repairing

Dist. Covered before repairing

$D_1 = S \times T$

Time: 9 : 50
− 8 : 20
1 : 30

Time= $1\frac{1}{2}$ hour

$D_1 = \frac{30\ km}{1\ h} \times \frac{3\ h}{2}$

$D_1 = (15 \times 3)$ km

$D_1 = 45$ km

Remaining distance

$D_2 = 109$ km − 45 km

$D_2 = 64$ km

Time taken to travel after repairing

Departure time:
9 : 50
+ 0 : 30
10 : 20 a.m.

Time taken:
12 : 20
− 2 : 20
2 : 00 hours

Speed = D ÷ T
= 64 km ÷ 2 hour
= 32 km/h

Therefore, the motorist rode at 32 km/h

B_1 for D_1 = 45 km
B_1 for D_2 = 64 km
B_1 for 2 hours
A_1 for 32 km/h

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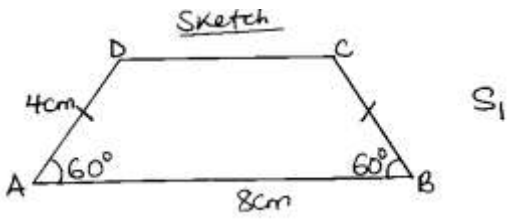
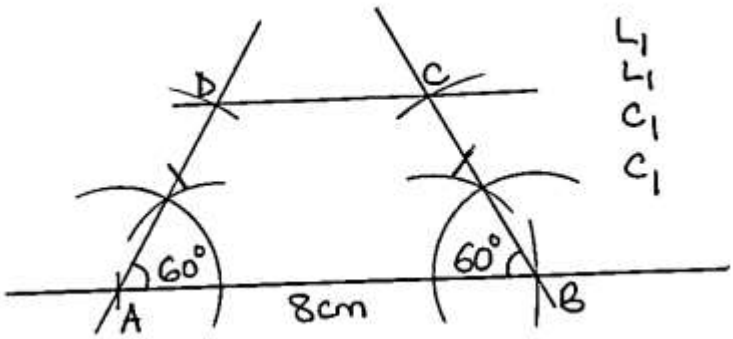
30. (a) Using a ruler and a pair of compasses only, construct a quadrilateral ABCD such that side AB = 8 cm, side AD = BC = 4 cm, and angle DAB = angle CBA = 60^0. *(05 marks)*





(b) Work out the perimeter of the quadrilateral. *(01 mark)*

P= 8 cm + 4 cm + 4 cm + 4.1 cm
P= 20.1 cm
B1 for 20.1 cm
Accept 20 cm

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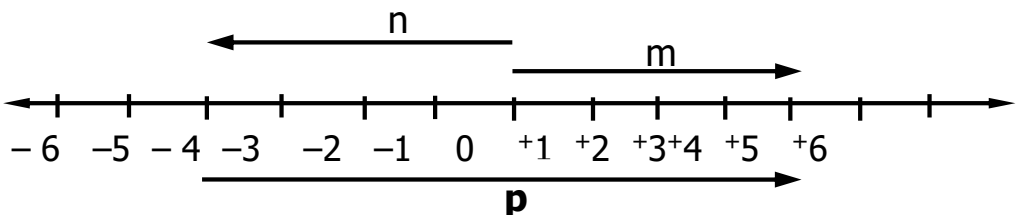
31. Use the number line below to answer the questions that follow.



(a) Write the integers represented by arrows. *(01 mark each)*

(i) **m = +4 or 4**
(ii) **n = −4**
(iii) **p = +8 or 8**

B_1 for every correct entry

(b) Write a mathematical sentence shown on the number line above. *(01 mark)*

m – n = p
+4 – −4 = +8

or +4 – −4 = +8
Correct: +4 – −4

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32. Below is a price list. Use it to answer the questions that follow.

Quantity	**Price**
1 kg of sugar	sh 8,000
$\frac{1}{2}$kg of rice	sh 2,000
1 kg of beans	sh 4,200
1 apple	sh 1,200

(a) Jane bought 2 kg of sugar, $1\frac{1}{2}$ kg of beans and 3 apples. How much did she pay altogether? *(04 marks)*

Sugar
Sh 8,000×2 = sh 16,000
Beans
$\frac{3}{2}$×sh 4,200 = sh 6,300
Apples
Sh 1,200×3 = sh 3,600

Total amount
Sh 16,000
Sh 6,300
+ Sh 3,600
Sh 25,900

B_1 for sh 16,000 (sugar)
B_1 for sh 6,300 (beans)
B_1 for sh 3,600 (apples)
A_1 for sh 25,900 (total)
- *Reject answers without sh and the name of items*
- *Reject answers with /=*

(b) How much money can one pay for 1,500 g of rice? *(02 marks)*

$\frac{1}{2}$ kg = $\frac{1}{2} \times$ 1,000 g
= 500 g
500 g $\Rightarrow$ sh 2,000
1 g $\Rightarrow$ sh 2,000÷500
1 g $\Rightarrow$ sh 4
1500 g $\Rightarrow$ sh 4 $\times$ 1,500
1500 g $\Rightarrow$ sh 6,000

Therefore, one can pay sh 6,000 for 1,500 g of rice

M_1 for correct working
A_1 for sh 6,000

Accept different correct approaches

END