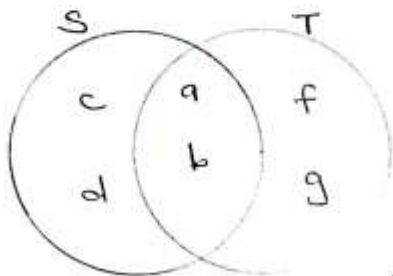
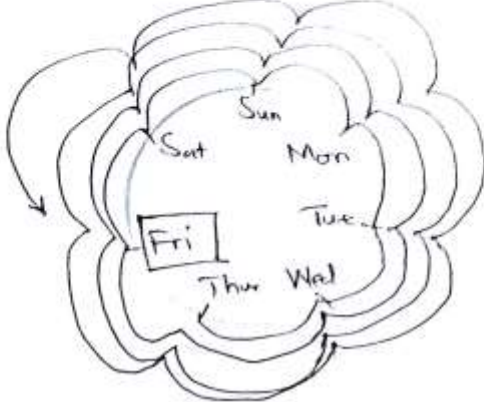
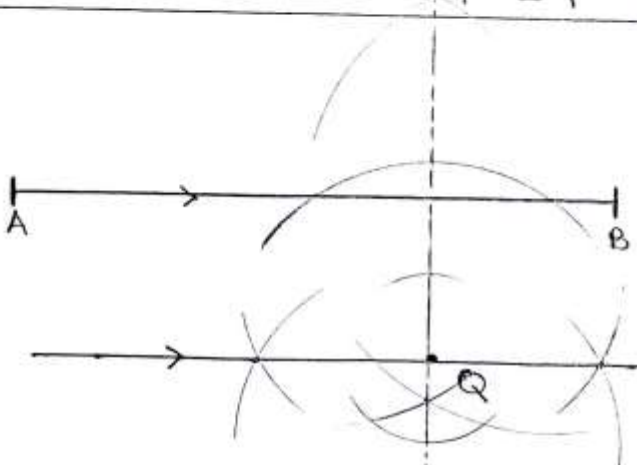
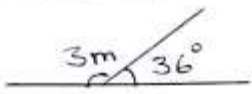


Q.N	SOLUTIONS	M	COMMENT
1.	$\begin{array}{r} 43 \\ + 62 \\ \hline 105 \end{array}$ $\begin{array}{l} 3+2=5 \\ 4+6=10 \end{array}$	B_2	Award B_2 for 105
2.	2020	B_2	Award B_2 for 2020
3.	$S = \{\check{a}, b, c, d\}$ $T = \{a, f, g, \check{b}\}$  $(S \cap T)' = \{c, d, f, g\}$ $\therefore n(S \cap T)' = 4$	B_1 B_1	<p>Award B_1 for identifying the members in the complement of the intersection set.</p> <p>Award B_1 for 4</p>
4.	$1, 8, 27, 64, \underline{125}$ <u>cube numbers</u> $\begin{array}{ll} 1 \times 1 \times 1 = 1 & 5 \times 5 \times 5 \\ 2 \times 2 \times 2 = 8 & \underline{3} \ 5 \\ 3 \times 3 \times 3 = 27 & \underline{\times 5} \\ 4 \times 4 \times 4 = 64 & 125 \end{array}$	B_1 B_1	<p>Award B_1 for identifying the cube numbers correctly.</p> <p>Award B_1 for 125 from correct interpretation.</p>
5.	<p>Range = Highest - Lowest</p> $\begin{array}{r} 3 - -4 \\ 3 - (-4) \\ 3 + 4 \\ 7 \end{array}$	m_1 A_1	<p>Award m_1 for the correct working.</p> <p>Award A_1 for 7.</p>
6.	$2^3 \times 3^2 \times 5^0$ $2 \times 2 \times 2 \times 3 \times 3 \times 1$ $8 \times 9 \times 1$ 8×9 72	m_1 A_1	<p>Award m_1 for correct interpretation of the powers especially power zero.</p> <p>Award A_1 for 72</p>

QN	SOLUTION	M	COMMENTS													
7.	<p><u>Days of the Week</u></p> <table border="1"> <tr> <td>Sun</td><td>Mon</td><td>Tue</td><td>Wed</td><td>Thur</td><td>Fri</td><td>Sat</td></tr> <tr> <td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> </table> $(4+1) - 28 = \text{Day} \pmod{7}$ $5 - 28 = \text{Day} \pmod{7}$ $5 - \frac{28}{7} = \text{Day} \pmod{7}$ $5 - 0 = \text{Day} \pmod{7} = 4 \text{ rem } 0$ $\therefore \text{Day} = 5$ <p>Since 5 represents Friday</p> <p>Therefore the day of the week was Friday.</p>	Sun	Mon	Tue	Wed	Thur	Fri	Sat	0	1	2	3	4	5	6	<p>m_1</p> <p>Award m_1 for the correct working i.e.</p> $(4+1) - 28 = - \pmod{5}$ <p>Award A_1 for Friday</p>
Sun	Mon	Tue	Wed	Thur	Fri	Sat										
0	1	2	3	4	5	6										
	<p>OR</p>  <p>Therefore Kintu celebrated his birthday on Friday</p>	<p>m_1</p> <p>Award m_1 for the correct working, i.e. using the dial - starting counting the 28 days from Thursday backwards.</p> <p>Award A_1 for Friday</p>														
8.	<p>450ml into litres</p> $1000\text{ml} = 1 \text{ litre}$ $1\text{ml} = \frac{1}{1000} \text{ litre}$ $450\text{ml} = \left(450 \times \frac{1}{1000}\right) \text{ litres}$ $\frac{45}{100} \text{ litre}$ $\therefore 450\text{ml} = 0.45 \text{ litre}$	<p>m_1</p> <p>Award m_1 for division of 450ml by 1000ml.</p> <p>Award A_1 for 0.45 litre</p>														
		A_1														

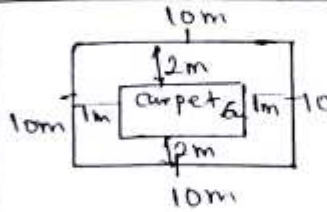
Q.N	SOLUTION	M	COMMENTS
9.	$5k - 3p + k + 5p$ $5k + k + 5p - 3p$ $6k + 2p$	m ₁ A ₁	Award m ₁ for collecting the like terms. Award A ₁ for $6k + 2p$
10.	Ending time = 1:15 pm Duration = 2hrs 15min Starting time = Ending time - Duration $\begin{array}{r} 1:15 \text{ pm} \\ + 12:00 \text{ hrs} \\ \hline 13:15 \text{ hrs} \end{array}$ $\begin{array}{r} 13:15 \text{ hrs} \\ - 2:15 \\ \hline 11:00 \text{ a.m.} \end{array}$	m ₁ A ₁	Award m ₁ for correct working Award A ₁ for 11:00 a.m.
11.	$\begin{array}{r} 274 \text{ five} \\ - 141 \text{ five} \\ \hline 133 \text{ five} \end{array}$ $\begin{array}{r} 4-1=3 \\ 2-4 \\ (2+5)-4 \\ 7-4=3 \\ 2-1=1 \end{array}$	m ₁ A ₁	Award m ₁ for correct working. Award A ₁ for 133_{five}
12.		B ₁	Award B ₁ for all arcs leading to the parallel line. Award B ₁ for the parallel line.
13.	$\begin{array}{r} \text{Th H T O} \\ 4287 \\ + 100 \\ \hline 4300 \end{array}$ $\begin{array}{r} 1 \times 100 \\ 100 \end{array}$ $\therefore 4287 \approx 4300$	m ₁ A ₁	Award m ₁ for the correct working. Reject "It is not plus one". $\begin{array}{r} 4287 \\ + 1 \\ \hline 4300 \end{array}$ Award A ₁ for 4300 Accept when there is no approximation.

Qn	SOLUTION	M	COMMENTS												
14	$\frac{3}{5} \gamma - 2 = 4$ $\frac{3}{5} \gamma - 2 + 2 = 4 + 2$ $5 \times \frac{3}{5} \gamma = 6 \times 5$ $3\gamma = 30$ $\frac{3\gamma}{3} = \frac{30}{3}$ $\gamma = 10$	<p>m_1</p> <p>A_1</p>	<p>Award m_1 for the collecting of liketerms.</p> <p>Award A_1 for $\gamma = 10$</p>												
15.	<p>Buying price = Selling price + loss</p> <p>Sh. 35,000 + Sh. 5,000</p> <p>B.P = Sh. 40,000</p> <p>% loss = $\frac{\text{Loss}}{\text{C.P}} \times 100\%$</p> <p>$\frac{\text{Sh. 5,000}}{\text{Sh. 40,000}} \times 100\%$</p> <p>$\frac{\text{Sh. 5,000}}{\text{Sh. 40,000}} \times \frac{5}{100} \times 100\%$</p> <p>$\frac{25}{2} \%$</p> <p>$12\frac{1}{2} \%$</p>	<p>B_1</p> <p>B_1</p> <p>B_1</p>	<p>Award B_1 for Sh. 40,000</p> <p>Follow through</p> <p>Award B_1 for $12\frac{1}{2} \%$</p>												
16.	<table border="1"> <thead> <tr> <th>Guests</th><th>Chairs</th><th>More chairs</th></tr> </thead> <tbody> <tr> <td>2</td><td>3</td><td>$3 - 2 = 1$</td></tr> <tr> <td></td><td></td><td>6</td></tr> </tbody> </table> <p>1 share repts 6 chairs</p> <p>2 Shares rept 2×6 guests</p> <p>2 Shares rept 12 guests</p> <p>\therefore 12 guests were at the Party.</p>	Guests	Chairs	More chairs	2	3	$3 - 2 = 1$			6	<p>B_1</p> <p>B_1</p>	<p>Award B_1 for the more ratio one</p> <p>Award B_1 for 12 guests.</p>			
Guests	Chairs	More chairs													
2	3	$3 - 2 = 1$													
		6													
17.	<table border="1"> <tbody> <tr> <td>5</td><td>27</td><td>2</td></tr> <tr> <td>5</td><td>5</td><td>0</td></tr> <tr> <td>5</td><td>1</td><td>1</td></tr> <tr> <td></td><td>0</td><td></td></tr> </tbody> </table> <p>$\therefore 27_{\text{ten}} = 102_{\text{five}}$</p>	5	27	2	5	5	0	5	1	1		0		<p>m_1</p> <p>A_1</p>	<p>Award m_1 for the correct working</p> <p>Award A_1 for 102_{five}</p>
5	27	2													
5	5	0													
5	1	1													
	0														

Q	SOLUTION	M	COMMENTS
18.	$\frac{3}{4} - \frac{1}{12}$ $\frac{3 \times 3 - 1 \times 1}{4 \times 3}$ $\frac{9 - 1}{12}$ $\frac{8}{12} = \frac{2}{3}$	m1 A1	<p>Award m1 for correct working.</p> <p>Award A1 for $\frac{2}{3}$</p>
19	<p>Sketch</p>  $3m + 36^\circ = 180^\circ$ $3m + 36^\circ - 36^\circ = 180^\circ - 36^\circ$ $3m = 144^\circ$ $\frac{3m}{3} = \frac{144^\circ}{3}$ $m = 48^\circ$	m1 A1	<p>Award m1 for correct formation of the equation.</p> <p>Award A1 for $m = 48^\circ$</p>
20.	<p>Base area = Length \times Width</p> $40\text{cm} \times 22\text{cm}$ 880 cm^2 <p>OR</p> 880 Sq. cm	m1 A1	<p>Award m1 for the correct substitution in the formulae.</p> <p>Award A1 for 880 cm^2 or 880 Sq. cm</p>
21.	<p>SECTION B.</p> <p>FF AND ONE</p> <p>3 1 2 five</p> <p>3 \times 5 \times 5</p> <p>3 \times 25</p> <p>75</p>	m1 A1	<p>Award m1 for the correct working.</p> <p>Award A1 for 75</p>
b)	$3k + 1 = 22$ $(3 \times k) + (1 \times 1) = 22$ $3k + 1 = 22$ $3k + 1 - 1 = 22 - 1$ $3k = 21$ $\frac{3k}{3} = \frac{21}{3}$ $k = 7$	m1 A1	<p>Award m1 for the correct working</p> <p>Award A1 for $k = 7$</p>

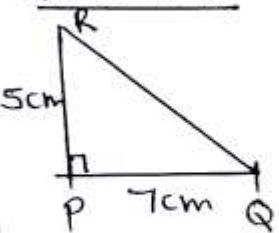
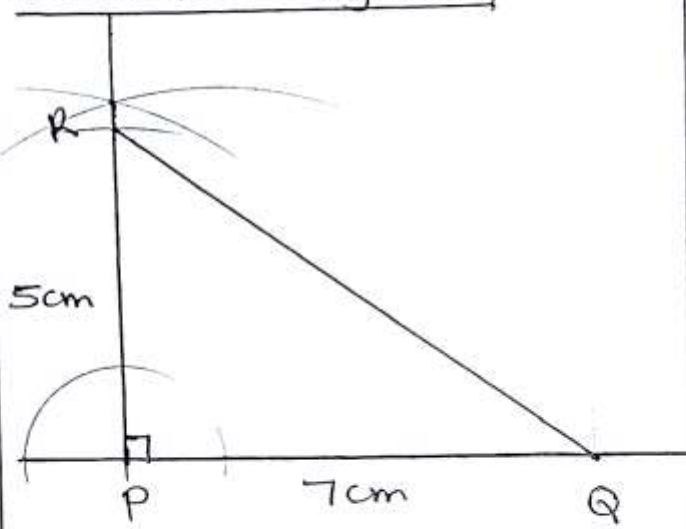
Q	SOLUTION	M	COMMENTS								
22	<table border="1"> <thead> <tr> <th>1st no</th><th>2nd no</th><th>3rd no</th><th>Sum</th></tr> </thead> <tbody> <tr> <td>$W-4$</td><td>$W-2$</td><td>W</td><td>24</td></tr> </tbody> </table> $ \begin{aligned} W + W - 2 + W - 4 &= 24 \\ W + W + W - 2 - 4 &= 24 \\ 3W - 6 &= 24 \\ 3W - 6 + 6 &= 24 + 6 \\ 3W &= 30 \\ \frac{3W}{3} &= \frac{30}{3} \\ W &= 10 \end{aligned} $ <p><u>Smallest number</u></p> $ \begin{aligned} W - 4 \\ 10 - 4 \\ 6 \end{aligned} $	1st no	2nd no	3rd no	Sum	$W-4$	$W-2$	W	24	<p>B_1</p> <p>m_1</p> <p>A_1</p> <p>B_1</p>	<p>Award B_1 for the correct interpretation of the question from the table.</p> <p>Award m_1 for the correct formation of the equation</p> <p>Award A_1 for $W=10$</p> <p>Award B_1 for the smallest number as 6.</p>
1st no	2nd no	3rd no	Sum								
$W-4$	$W-2$	W	24								
23											
a)	$n(E) = h + 15 + 2$ <div style="border: 1px solid black; padding: 10px; display: inline-block;"> $\begin{array}{ccc} n(M)=20 & n(E)=15 & \\ \hline h & 7 & \frac{15-7}{8} \\ & & 2 \end{array}$ </div>	<p>B_1</p> <p>B_1</p>	<p>Award B_1 and another B_1 for the correct completion of the Venn diagram.</p>								
b)	$ \begin{aligned} h + 7 &= 20 \\ h + 7 - 7 &= 20 - 7 \\ h &= 13 \end{aligned} $	<p>m_1</p> <p>A_1</p>	<p>Award m_1 for correct formation of the equation.</p> <p>Award A_1 for $h=13$</p>								
c)	$ \begin{aligned} &h + 15 + 2 \text{ pupils} \\ &h + 17 \text{ pupils} \\ &13 + 17 \text{ pupils} \\ &30 \text{ pupils} \end{aligned} $ <p>$\therefore 30$ pupils are in the class.</p>	<p>m_1</p> <p>A_1</p>	<p>Award m_1 for the correct work working</p> <p>Award A_1 for 30 pupils.</p>								

Q.N	SOLUTION	M	COMMENTS
24	$ac - b$ a) $axc - b$ $a \times 2a - b$ $2 \times 2 \times 2 - b - 3$ $8 - (-3)$ $8 + 3$ 11	m_1 A_1	Award m_1 for correct substitution. Award A_1 for 11
	b) $2c + b^2$ $2xc + b \times b$ $2 \times 2a + b \times b$ $2 \times 2 \times 2 + -3 \times -3$ $8 + (9)$ $8 + 9$ 17	m_1 m_1 A_1	Award m_1 for correct substitution Award m_1 for simplifying the integers. Award A_1 for 17
25	<div> <div> <u>Distance in km</u> a) $1000m = 1km$ $1m = \frac{1}{1000} km$ $10m = (\frac{1}{1000} \times 10) km$ $10m = \frac{1}{100} km$ </div> <div> <u>Time in hr</u> $1 sec = \frac{1}{3600} hr$ </div> </div> <div> $Speed = Distance \div Time$ $\frac{1}{100} km \div \frac{1}{3600} hr$ $\frac{1}{100} km \times \frac{3600}{1 hr}$ $36 \frac{km}{hr}$ $\therefore 10m/sec = 36 km/hr$ </div>	m_1 A_1	Award m_1 for division Award A_1 for 36 km/hr

Qn	SOLUTION	M	COMMENTS
25 b)	<p>60 minutes = 1 hour 1 minute = $\frac{1}{60}$ hr 72 minutes = $(\frac{1}{60} \times \frac{72}{1})$ hr $\frac{72}{5}$ $\frac{6}{5}$ hrs</p> <p>Speed = $\Delta \div T$ $240 \text{ km} \div \frac{6}{5} \text{ hr}$ $\frac{40}{240} \text{ km} \times \frac{5}{6} \text{ hr}$ $40 \text{ km} \times \frac{1}{5} \text{ hr}$ 200 km/hr</p>	<p>B₁</p> <p>m₁</p> <p>A₁</p>	<p>Award B₁ for time in hours $\frac{6}{5}$ hrs or $1\frac{1}{5}$ hrs or its equivalence</p> <p>Award m₁ for division</p> <p>Award A₁ for 200 km/hr.</p>
26 a)	<p>$K + 27^\circ + 90^\circ = 180^\circ$ $K + 117^\circ = 180^\circ$ $K + 117^\circ - 117^\circ = 180^\circ - 117^\circ$ $K = 63^\circ$</p>	<p>m₁</p> <p>A₁</p>	<p>For correct formation of the equation.</p> <p>For $K = 63^\circ$</p>
b)	<p>$2W + 30^\circ = 90^\circ$ $2W + 30^\circ - 30^\circ = 90^\circ - 30^\circ$ $2W = 60^\circ$ $\frac{2W}{2} = \frac{60^\circ}{2}$ $W = 30^\circ$</p>	<p>m₁</p> <p>A₁</p>	<p>For correct formation of the equation.</p> <p>For $W = 30^\circ$</p>
27 a)	 <p>Side of the room $2m + 2m + 6m$ 10m</p> <p>Length of the carpet $10m - (1m + 1m)$ $10m - 2m$ 8m</p>	<p>B₁</p> <p>B₁</p>	<p>Award B₁ 10m</p> <p>Award B₁ for 8m</p>

Qn	SOLUTION	M	COMMENTS										
b)	<u>Area of the room</u> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Side x Side 10m x 10m 100m² OR 100 sq. m </div> <div style="width: 45%;"> Area of the Carpet L x W 8m x 6m 48sq. m </div> </div> <u>Area of the room not covered by the carpet.</u> <div style="text-align: center;"> 100 sq. m - 48 sq. m <hr/> 52 sq. m </div>	B ₁ B ₁ B ₁	Award B ₁ for 100sq. m Award B ₁ for 48sq. m Award B ₁ for 52 sq. m.										
28 a)	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: left;">Meat</th> <th style="width: 50%; text-align: left;">O. oil</th> </tr> <tr> <td>Sh. 8,000 × $\frac{3}{2}$ Sh. 16,000</td> <td>Sh. 4,500 × $\frac{1}{2}$ Sh. 900</td> </tr> <tr> <td>Sh. 8,000 × $\frac{1}{3}$ Sh. 2,400</td> <td>Sh. 4,500</td> </tr> <tr> <td><u>Rice</u></td> <td><u>Total Expenditure</u></td> </tr> <tr> <td>Sh. 4,000 × 3 Sh. 12,000</td> <td>Sh. 24,000 Sh. 12,000 + Sh. 04,500 <hr/>Sh. 40,500</td> </tr> </table>	Meat	O. oil	Sh. 8,000 × $\frac{3}{2}$ Sh. 16,000	Sh. 4,500 × $\frac{1}{2}$ Sh. 900	Sh. 8,000 × $\frac{1}{3}$ Sh. 2,400	Sh. 4,500	<u>Rice</u>	<u>Total Expenditure</u>	Sh. 4,000 × 3 Sh. 12,000	Sh. 24,000 Sh. 12,000 + Sh. 04,500 <hr/> Sh. 40,500	B ₁ B ₁ B ₁ B ₁	For sh. 24,000 For sh. 4,500 For sh. 12,000 For sh. 40,500
Meat	O. oil												
Sh. 8,000 × $\frac{3}{2}$ Sh. 16,000	Sh. 4,500 × $\frac{1}{2}$ Sh. 900												
Sh. 8,000 × $\frac{1}{3}$ Sh. 2,400	Sh. 4,500												
<u>Rice</u>	<u>Total Expenditure</u>												
Sh. 4,000 × 3 Sh. 12,000	Sh. 24,000 Sh. 12,000 + Sh. 04,500 <hr/> Sh. 40,500												
b)	<u>Actual Expenditure</u> Sh. 40,500 - Sh. 500 <hr/> Sh. 40,000 <u>Balance</u> Sh. 50,000 - Sh. 40,000 <hr/> Sh. 10,000	 B ₁ B ₁	 For sh. 40,000 For sh. 10,000										

Q/N	SOLUTION	M	COMMENTS
29. a)	$\frac{2.4 \times 0.5}{0.6}$ $\left(\frac{24}{10} \times \frac{5}{10}\right) \div \frac{6}{10}$ $\frac{24}{10} \times \frac{5}{10} \times \frac{10}{6}$ $\frac{4 \times 5}{10}$ $\frac{20}{10}$ 2	 m1 m1 A1	Award m1 for changing to fractions. Award m1 for correct working. Award A1 for 2
b)	$0.5 - 1.3 + 2.5$ $0.5 + 2.5 - 1.3$ $3.0 - 1.3$ 1.7	 m1 A1	Award m1 for correct working Award A1 for 1.7
30 a)	$k \times 2 \times 3 = 30$ $k \times 6 = 30$ $(1) \quad k \times \frac{6}{6} = \frac{30}{6}$ $k \times 1 = 5$ $k = 5$	 m1 A1	Award m1 for correct working Award A1 for k=5
(ii)	$m = 2 \times 2 \times 3$ $m = 4 \times 3$ $m = 12$	 m1 A1	For correct working For m = 12
b)	$\text{GCF} = 2 \times 3$ $\text{GCF} = 6$	 B1	Award B1 for 6 as the GCF of PFm and PF30

Qn	SOLUTION	M	COMMENTS
31	<u>Sketch</u>		
a)		S ₁	For the detailed sketch.
	<u>Accurate diagram</u>	L ₁	For 7cm
		L ₁	For 5cm
		C ₁	For the arcs of 90°.
b)	Angle PRQ = 54°	B ₁	For 54°.
32	1 + 3 + 2 + 4 pupils	m ₁	For correct working
a)	10 pupils	A ₁	For 10 pupils
b)	Average score		
	$\frac{\text{Sum of scores}}{\text{No. of pupils}}$		Award m ₁ for the correct working
	$\frac{(90 \times 1) + (10 \times 3) + (80 \times 2) + (60 \times 4)}{10}$	m ₁	Award m ₁ for division.
	$\frac{90 + 210 + 160 + 240}{10}$		
	$\frac{300 + 400}{10}$		
	$\frac{700}{10}$	m ₁	
	70	A ₁	Award A ₁ for 70