P3 Solutions

Note: In all solutions, U represents Units

Chapter 1 Numbers Up To 10 000

Unit 1.1 – Identifying Place Values and Digits

Qn 1 1238 : 3 is in the tens place, 1238 is lesser than 2000, 2 is in the hundreds place
Qn 2 3619 : 6 (hundreds place) is 5 more than 1 (tens place), 1 (tens place) is 2 lesser than 3 (thousands place)
Qn 3 3268 : 2 (hundreds place) is 6 less than 8 (ones place), 6 (tens place) is 3 more than 3 (thousands place)
Qn 4 742 : 7 (hundreds place) is 3 more than 4 (tens place), 4 (tens place) is twice of 2 (ones place)
Qn 5 1634 : 6 (hundreds place) is twice of 3 (tens place), 3 (tens place) is thrice of 1 (thousands place)

Unit 1.2 – Arranging Digits Within Place Values

Qn 1 : 1236
Qn 2 : 5320
Qn 3 : 2354
Qn 4 : 4085
Qn 5 : 7430
Qn 6 : 9503

Unit 1.3 – Addition & Subtraction Involving Unknown

Qn 1
\[
\begin{align*}
\text{2} & + 2 & + 2 & = 60 \\
\phantom{+} & + & + & = 30
\end{align*}
\]

Qn 2
\[
\begin{align*}
3 & = 18 & = 6 \\
\phantom{+} & + 6 & = 13 & = 7 \\
7 & + 6 & = 34 & = 21
\end{align*}
\]

Qn 3
\[
\begin{align*}
3 & + 3 & = 32 + 28 = 60 \\
\phantom{+} & + & = 20 \\
20 & + & = 37 & = 17
\end{align*}
\]

Qn 4
\[
\begin{align*}
\text{12} & \quad \text{9} & \quad \text{7} \\
\phantom{+} & \quad \text{5} & \quad \text{8}
\end{align*}
\]

Qn 5
\[
\begin{align*}
\text{8} & \quad \text{5} & \quad \text{6} \\
\phantom{+} & \quad \text{9} & \quad \text{10}
\end{align*}
\]

Unit 1.4 - Comparison – More Than Models

Qn 1
\[
\begin{array}{|c|c|c|}
\hline
& \text{Men} & \text{Women} \\
\hline
\text{Men} & 4245 & \phantom{+} \\
\hline
\text{Women} = & 4245 + 964 & 964 \\
\hline
& = 5209 & \phantom{+} \\
\hline
\end{array}
\]

Alice

245

Janet

245

Total = 245 + 245 + 125 = 615

They have 615 stickers altogether.

Qn 2
\[
\begin{array}{|c|c|}
\hline
& \text{Adults} & \text{Children} \\
\hline
\text{Adults} & 465 & \phantom{+} \\
\hline
\text{Children} & 465 & 245 \\
\hline
\text{Total} = & 465 + 465 + 245 & 1175 \\
\hline
\end{array}
\]

There was 1175 people altogether.

Qn 4
\[
\begin{array}{|c|c|c|}
\hline
& \text{Boys} & \text{Girls} \\
\hline
\text{Boys} & 325 & \phantom{+} \\
\hline
\text{Girls} & 325 & 432 \\
\hline
\text{Total} = & 325 + 325 + 432 & 1082 \\
\hline
\end{array}
\]

Visit the forum page at www.onSponge.com for more challenging problem sums.
Unit 1.5 – Comparison – Less Than Models

Qn 1

\[
\begin{align*}
\text{Men} & : 3099 \\
\text{Women} = 4786 - 3099 & = 1687
\end{align*}
\]

\[
4786
\]

Qn 2

\[
\begin{align*}
\text{Jasper} & : 214 \\
\text{Cindy} & : 88 + 126 = 214 \\
\text{Total} & : 88 + 214 = 302
\end{align*}
\]

They collected 302 seashells altogether.

Qn 3

\[
\begin{align*}
\text{Adults} & : 1240 \\
\text{Children} & : 4610 - 1240 = 3370
\end{align*}
\]

Qn 4

\[
\begin{align*}
\text{Morning} & : 665 \\
\text{End of Day} & : 120 \\
\text{gave away} & \\
\text{Number of car decals given away} & = 665 - 120 = 545
\end{align*}
\]

Unit 1.6 – Equal Concept With Model Drawing

Qn 1

\[
\begin{align*}
\text{6A} & : 8 \\
\text{6B} & : 36 - 8 = 28
\end{align*}
\]

Qn 2

\[
\begin{align*}
\text{Dinesh} & : 1 \text{ unit} = 36 \\
\text{Melissa} & : 36 \\
1 \text{ unit} & = 36 + 36 = 72
\end{align*}
\]

Amount of money each person received at first = 72 + 36 = $108

Unit 1.7 – Working Backwards With Unknown Beginning

Qn 1

\[
\begin{align*}
\text{Before 2nd stop} & = 34 - 6 + 4 = 32 \\
\text{At interchange} & = 32 - 7 + 5 = 30
\end{align*}
\]

30 passengers boarded the bus at the interchange at first.

Qn 2

\[
\begin{align*}
\text{Before 2nd stage} & = 50 - 13 + 8 = 45 \\
\text{At start of game} & = 45 - 12 + 8 = 41
\end{align*}
\]

John had 41 marbles before the game.

Qn 3

\[
\begin{align*}
\text{Number of bottles used} & = (15 \times 5) + (20 \times 2) = 75 + 40 = 115 \\
\text{Number of bottles bought} & = 115 + 120 = 235
\end{align*}
\]

Qn 4

\[
\begin{align*}
\text{At first} & \\
\text{End} & : 42 \\
\text{2 units} & = 42 \\
\text{1 unit} & = 42 + 2 = 44
\end{align*}
\]

He had 21 marbles at first.

Qn 5

\[
\begin{align*}
\text{Extra passengers} & = 132 - 12 = 120 \\
\text{3 units} & = 120 \\
\text{1 unit} & = 120 + 3 = 40
\end{align*}
\]

There were 40 passengers on the train at first.
Qn 6

\[
2 \text{ units} = 12 + 8 = 20 \\
1 \text{ unit} = \frac{20}{2} = 10 \\
\text{Number of sweets each of them had at first} = 10 + 12 = 22
\]

Qn 7

\[
2 \text{ units} = 24 \text{ sweets} \\
1 \text{ unit} = \frac{24}{2} = 12 \\
\text{Number of sweets each had at first} = 1 \text{ unit} - 6 = 12 - 6 = 6
\]

Qn 8

At first

\[
1 \text{ unit} \\
\text{End} \quad 1 \text{ unit} \\
\text{Extra} = 48 - 3 - 5 = 40 \\
2 \text{ units} = 40 \\
1 \text{ unit} = 20 \\
\text{At first} = 1 \text{ unit} = 20 \\
\text{She had 20 sweets at first.}
\]

Unit 1.8 – Internal Transfer

Qn 1

| Class 6A | 10 |
| Class 6B | 10 |

Number of students in each class at first = 45 - 10 = 35

Qn 2

\[
2 \text{ units} = $18 + $18 = $36 \\
1 \text{ unit} = $18 \\
\text{Amount of money each of them had at first} = $18 + $18 = $36
\]

Qn 3

| James | 24 |
\[
\text{Number of marbles to be given to Lynn} = 24 + 2 = 12
\]

Qn 4

| ABC | 144 |
| XYZ |   |

Number of members transferred = 144 ÷ 2 = 72

Qn 5

| Class 3A | 12 |
| Class 3B | 12 |

1 unit = 12 + 12 = 24 \\
Number of students in each class at first = 24 + 12 = 36

Qn 6

\[
\text{Difference between Alex and Ben} = 34 - 6 = 28 \\
\text{Alex would have 28 more stickers than Ben.}
\]

Qn 7

\[
\text{Difference between Charles and Denise} = $75 - $45 = $30 \\
\text{Charles would have $30 more than Denise.}
\]

Qn 8

\[
\text{Difference} = 505 - 120 = 385 \\
\text{There are 385 more students in Betty Primary School than in Fernland Primary School.}
\]
Qn 9

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus A</td>
<td>25</td>
</tr>
<tr>
<td>Bus B</td>
<td>18</td>
</tr>
</tbody>
</table>

25 - 7 = 18

There would be 11 more passengers on Bus A than on Bus B.

Qn 10

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Train X</td>
<td>42</td>
</tr>
<tr>
<td>Train Y</td>
<td>25</td>
</tr>
</tbody>
</table>

42 - 17 = 25

There would be 8 more passengers in Train X than in Train Y.

Qn 11

Esther  Jane

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Esther</td>
<td>86</td>
</tr>
<tr>
<td>Jane</td>
<td></td>
</tr>
</tbody>
</table>

Esther must give Jane 23 stickers.

Qn 12

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tan</td>
<td>84</td>
</tr>
<tr>
<td>Ismal</td>
<td></td>
</tr>
</tbody>
</table>

Mrs Tan must give 36 cookies.

Qn 13

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus A</td>
<td>40</td>
</tr>
<tr>
<td>Bus B</td>
<td></td>
</tr>
</tbody>
</table>

2 + 8 = 40
2 = 40 - 8 = 32
8 = 32 / 2 = 16
16 passengers must transfer from Bus A.

Chapter 2 Number Patterns

Unit 2.1 - Linear Formation

Qn 1

(a) 1st lamp post to 20th lamp post = 19 gaps
Distance = 19 x 20 m = 380 m

(b) 5th lamp post to 20th lamp post = 15 gaps
Distance = 15 x 20 m = 300 m

Qn 2

(a) Number of markings = 20 - 1
= 19

(b) Length between any 2 markings = 200 / 20
= 10 cm

(c) Distance between 1st and 9th marking = 10 cm x 8
= 80 cm

Qn 3

60 trees - 4 trees (at the corners) = 56
56 / 4 = 14
At each side, there were 14 + 2 (trees at the 2 corners on each side of garden) = 16 trees

Qn 4

56 cones - 4 cones (at the corners) = 52 cones
52 cones / 4 = 13 cones
13 + 2 (cones at the 2 corners on each side)
= 15 cones along each side

Qn 5

40 students - 4 students (at the corners) = 36 students
36 / 4 = 9 students
9 + 2 (students at the 2 corners on each side)
= 11 students

Qn 6

54 trees - 3 trees (at the corners) = 51
51 / 3 = 17
17 + 2 (trees at the 2 corners on each side) = 19 trees

Qn 7

42 students - 3 students (at the corners) = 39 students
39 / 3 = 13 students
13 + 2 (students at the corners on each side)
= 15 students
Unit 2.2 - Regular Gaps

Qn 1
(a) Figure 5 = 5 \times 3 + 1 = 16 sticks
(b) Figure 10 = 10 \times 3 + 1 = 31 sticks
(c) Figure 20 = 20 \times 3 + 1 = 61 sticks
(d) 244 – 1 = 243
243 + 3 = 81
Figure 81 has 244 sticks.

Qn 2
(a) Figure 5 = 5 \times 2 + 1 = 11 sticks
(b) Figure 10 = 10 \times 2 + 1 = 21 sticks
(c) Figure 20 = 20 \times 2 + 1 = 41 sticks
(d) 137 – 1 = 136
136 + 2 = 68
Figure 68 has 137 sticks.

Qn 3
(a) Figure 5 = 5 \times 3 + 2 = 17 dots
(b) Figure 10 = 10 \times 3 + 2 = 32 dots
(c) Figure 30 = 30 \times 3 + 2 = 92 dots
(d) 152 – 2 = 150
150 + 3 = 50
Figure 50 has 152 dots.

Qn 4
(a) Figure 5 = 5 \times 5 = 25 sticks
(b) Figure 10 = 10 \times 5 = 50 sticks
(c) Figure 20 = 20 \times 5 = 100 sticks
(d) 135 – 5 = 27
Figure 27 has 135 sticks.

Qn 5
(a) Figure 5 = 5 + 2 = 7 dots
(b) Figure 10 = 10 + 2 = 21 sticks
(c) Figure 20 = 20 + 2 = 22 dots
(d) 99 – 2 = 97
Figure 97 has 99 dots.
(e) 215 – 1 = 214
214 + 2 = 107
Figure 107 has 215 dots.

Qn 6
(a) Figure 5 = 5 \times 3 + 1 = 16 dots
(b) Figure 10 = 10 \times 3 + 1 = 31 dots
(c) Figure 20 = 20 \times 3 + 1 = 61 dots
(d) 109 – 1 = 108
108 + 3 = 36
Figure 36 has 109 dots.

Chapter 3 Division

Unit 3.1 – Division with Remainder

Qn 1
25 \times 5 = 125
125 + 2 = 127

Qn 2
95
9 \sqrt{858}
91
48
45
3
3 sweets are left unpacked.

Qn 3
236 \div 6 = 39 r 2
She can give to 39 friends.

Qn 4
1 \times 8 + 4 = 12

Qn 5
Multiples of 5 : 5, 10, 15, 20, 25, 30, 35, 40
Add 3 : 8, 13, 18, 23, 28, 33, 38, 41
Multiples of 7 : 7, 14, 21, 28, 35, 42, 49, 56
Add 5 : 12, 19, 26, 33, 40, 47, 54, 61
The smallest number is 33.

Qn 6
117 + 8 = 125
125 + 5 = 25
There are 25 students in her class.

Qn 7
243 – 3 = 240
240 + 6 = 40
There are 40 students in her class.

Unit 3.2 - Equal Distribution Without Remainder

Qn 1
425 \div 5 = 85
She would need 85 containers.

Qn 2
2000 \div 8 = 250
She would need 250 boxes.

Qn 3
588 \div 6 = 98
She used 98 boxes.

Qn 4
(a) 63 \div 5 = 12 r 3
3 students were not involved.
(b) 63 \div 9 = 7
7 students in each new group.

Qn 5
Multiples of 7 = 49, 56, 63, 70, 77, 84
Add 6 :6 + 6 + 6 + 6 + 6 + 6
55, 62, 69, 76, 83, 90
Multiples of 5 = 50, 55, 60, 65, 70, 75
Add 4 :4 + 4 + 4 + 4 + 4 + 4
54, 59, 64, 69, 74, 79
The minimum number of stickers is 69.

Qn 6
Gives 5 sweets to each child = 54 extra sweets
Gives 8 sweets to each child = need 33 more sweets
Giving extra 3 sweets to each child = need (54 + 33) = 87 sweets more
Giving extra 1 sweet to each child = need (87 + 3) = 29 sweets more
She has 29 children in her class.

Visit the forum page at www.onSponge.com for more challenging problem sums.
Qn 7

Divide into groups of 10 = 9 left
Divide into groups of 12 = 7 left

Multiples of 10 = 50, 60, 70, 80, 90, 100
Add 9 = 59, 69, 79, 89, 99, 109

Multiples of 12 = 60, 72, 84, 96, 108
Add 7 = 67, 79, 91, 103, 115

The minimum number of stamps is 79.

Unit 3.3 – More Than / Less Than (Division)

Qn 1

<table>
<thead>
<tr>
<th>Imran</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashley</td>
<td></td>
</tr>
</tbody>
</table>

184 – 32 = 152
152 ÷ 2 = 76

Ashley had 76 stamps.

Qn 2

<table>
<thead>
<tr>
<th>Mary</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jenny</td>
<td></td>
</tr>
</tbody>
</table>

98 – 32 = 66
66 ÷ 2 = 33

Number of marbles Mary has = 33 + 32 = 65

Qn 3

<table>
<thead>
<tr>
<th>Men</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td></td>
</tr>
</tbody>
</table>

2 units = 458 – 200 = 258
1 unit = 258 ÷ 2 = 129

129 women took part in the triathlon.

Qn 4

<table>
<thead>
<tr>
<th>Dave</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ronald</td>
<td></td>
</tr>
</tbody>
</table>

2 units = 240 – 28 = 212
1 unit = 212 ÷ 2 = 106

Dave received = 106 + 28 = 134 sweets

Ronald received 106 sweets.

Qn 5

<table>
<thead>
<tr>
<th>Adults</th>
<th>68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td></td>
</tr>
</tbody>
</table>

2 units = 232 – 68 = 164
1 unit = 164 ÷ 2 = 82

There were 82 children.

Qn 6

<table>
<thead>
<tr>
<th>Boys</th>
<th>44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td></td>
</tr>
</tbody>
</table>

2 units = 220 – 44 = 176
1 unit = 176 ÷ 2 = 88

Number of boys = 88 + 44 = 132

Qn 7

<table>
<thead>
<tr>
<th>Adults</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Children</td>
<td>86</td>
</tr>
</tbody>
</table>

2 units = 420 – 86 = 334
1 unit = 334 ÷ 2 = 167

Number of children = 86 + 167 = 253

Qn 8

<table>
<thead>
<tr>
<th>Chocolate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanilla</td>
<td></td>
</tr>
<tr>
<td>Strawberry</td>
<td></td>
</tr>
</tbody>
</table>

5 units = 75
1 unit = 75 ÷ 5 = 15

Number of cookies at first = 10 units = 10 × 15 = 150

Qn 9

<table>
<thead>
<tr>
<th>Malaysia</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>50</td>
</tr>
<tr>
<td>China</td>
<td></td>
</tr>
</tbody>
</table>

4 units + 50 = 230
4 units = 230 – 50 = 180
1 unit = 45

Number of Singapore stamps bought = 45 + 50 = 95

Qn 10

<table>
<thead>
<tr>
<th>John</th>
<th>320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belinda</td>
<td></td>
</tr>
</tbody>
</table>

(a) 2 units = 600 – 320 = 280
1 unit = 280 ÷ 2 = 140

Belinda has 140 stickers.

(b) John has = 140 + 320 = 460 stickers
Qn 11

Men
Women
2 units = 642 - 230 = 412
1 unit = 412 ÷ 2 = 206
There were 206 men at the trade fair.

Qn 12

Hall
Auditorium
2 units = 2400 - 820
= 1580
1 unit = 1580 ÷ 2
= 790
Number of students the hall can accommodate = 790 + 820 = 1610

Qn 13

Girls
Boys
2 units = 1420 - 424
= 996
1 unit = 996 ÷ 2
= 498
(a) Number of boys = 498 + 424 = 922
(b) Number of girls = 498

Unit 3.4 - More Than / Less Than (Multiple Individuals)

Qn 1

Lucas
Bryan
John
3 units + 67 + 67 + 56 = 250
3 units = 250 - 190
= 60
1 unit = 20
Number of stamps Bryan had = 20 + 67 = 87

Qn 2

Boys
Girls
Adults
4 units + 54 + 54 + 70 = 210
4 units = 210 - 178 = 32
1 unit = 8
Number of boys at the gathering = 8 + 54 = 62

Qn 3

Boys
Girls
Adults
4 units + 28 + 28 + 32 = 96
1 unit = 96 - 88 = 8
Total number of children = 2 units + 28 = 32

Qn 4

Bernard
Alan
Dave
3 units = $14 + $14 + $28 = $80
3 units = $80 - 56
1 unit = $24
1 unit = $8
Dave had $8.

Qn 5

Children
Men
Women
3 units + 225 + 225 + 120 = 1440
3 units = 1440 - 225 - 225 - 120
= 870
1 unit = 290
Number of children = 290 + 225 + 120 = 635

Qn 6

Strawberry
Chocolate
Vanilla
3 units = 363 - 124 - 104 = 135
1 unit = 45
Chocolate buns produced = 45 + 124 = 169

Qn 7

Green
Red
Blue
3 units = 335 - 125 - 84 = 126
1 unit = 42
There were 42 red marbles.

Visit the forum page at www.onSponge.com for more challenging problem sums.
Chapter 4 Multiplication

Unit 4.1 – Repeated Identity

Qn 1

<table>
<thead>
<tr>
<th>Morning</th>
<th>125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afternoon</td>
<td>125</td>
</tr>
</tbody>
</table>

In the afternoon = 125 × 3 = 375
There were 375 passengers on the ship in the afternoon.

Qn 2

<table>
<thead>
<tr>
<th>X</th>
<th>137</th>
</tr>
</thead>
</table>

Mass of Container Y = 137 × 6 = 822 kg

Qn 3

<table>
<thead>
<tr>
<th>Melvin</th>
<th>84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alvin</td>
<td></td>
</tr>
</tbody>
</table>

Number of books Alvin read = 84 × 5 = 420

Qn 4

<table>
<thead>
<tr>
<th>Red</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td></td>
</tr>
</tbody>
</table>

(a) Number of blue marbles = 45 × 4 = 180
(b) Total number of marbles = 180 + 45 = 225

Qn 5

<table>
<thead>
<tr>
<th>Katherine</th>
<th>$24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tom</td>
<td></td>
</tr>
<tr>
<td>Gareth</td>
<td></td>
</tr>
</tbody>
</table>

Amount of money Gareth has = 24 × 8 = $192

Unit 4.2 – Gap and Difference

Qn 1

Amount of money Mrs Koh had = $70 × 4 − $15 = $285

Qn 6

Total number of sweets in Container C = 42 × 8 = 336

Qn 7

<table>
<thead>
<tr>
<th>Chocolate</th>
<th>54</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strawberry</td>
<td>12</td>
</tr>
<tr>
<td>Vanilla</td>
<td>54 54 54</td>
</tr>
</tbody>
</table>

Total number of cookies she baked = 54 × 5 + 12 = 282

Qn 8

<table>
<thead>
<tr>
<th>Red</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Green</td>
<td>45</td>
</tr>
</tbody>
</table>

Total number of markers purchased = 4 units + 45
= 4 × 80 + 45
= 320 + 45
= 365

Qn 9

<table>
<thead>
<tr>
<th>Adults</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td></td>
</tr>
<tr>
<td>Girls</td>
<td>480</td>
</tr>
</tbody>
</table>

6 units = 480
1 unit = 480 ÷ 6
= 80
No. of girls at the funfair = 80 × 3 = 240

Qn 10

<table>
<thead>
<tr>
<th>Green</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>650</td>
</tr>
</tbody>
</table>

Total = 13 units = 650
1 unit = 650 ÷ 13 = 50
Number of green marbles = 50 × 4 = 200
Qn 2
Amount of money Tommy had = $4 \times 8 - $9
= $32 - $9
= $23

Qn 3
Number of muffins Mrs Krishnan baked = 40 \times 4 + 25
= 160 + 25
= 185

Qn 4
Amount of money James had at first = 12 \times $4 + $7
= $48 + $7
= $55

Qn 5
Number of muffins Mrs Tan baked at first = 12 \times 8 + 5
= 96 + 5
= 101

Qn 6
Buys 4 pencils = left $2
Buys 5 pencils = need $1 more
1 extra pencil need = $(2 + 1)
= $3

(a) A pencil costs $3.
(b) Amount of money Jeremy had at first = 4 \times $3 + $2
= $12 + $2
= $14

Qn 7
Buys 4 erasers = $1 left
Buys 8 erasers = need $3 more
4 extra erasers need = $(1 + 3)
= $4
1 extra eraser need = $(4 + 4)
= $1

(a) The cost of 1 eraser is $1.
(b) Amount of money Kevin had at first = 4 \times $1 + $1
= $5

Qn 8
Each child gets 3 sweets = 30 left
Each child gets 4 sweets = need 5 more
Each child gets 1 extra sweet need = 30 + 5
= 35 more

(a) There are 35 students in Miss Lim’s class.
(b) Number of sweets = 35 \times 3 + 30 = 135

Qn 9
Each child gets 2 chocolates = 40 left
Each child gets 4 chocolates = need 30 more
Each child gets 2 extra chocolates need = 40 + 30
= 70 more
Each child gets 1 extra chocolate need = 70 + 2
= 35 more

(a) There are 35 children in the class.
(b) Number of chocolates at first = 35 \times 2 + 40 = 110

---

Unit 4.3 – Internal Transfer

Qn 1
In the end
Ryan
Aaron
3 units = 156
1 unit = 156 \div 3 = 52
Number of bottle caps Ryan had at first = 52 \times 2 + 40 = 144

Qn 2
Train A
Train B
5 units = 205
1 unit = 205 \div 5 = 41
Number of passengers in Train B at first = 41 - 16 = 25

Qn 3
Box A
Box B
3 units = 189
1 unit = 189 \div 3 = 63
Number of apples in Box A at first = 63 \times 8 = 504

Qn 4
Bag A
Bag B
1 unit = 88
Number of balls in Bag A at first = 88 \times 4 = 352

Qn 5
Boys
Girls
2 units = 124
1 unit = 62
No. of boys at first = 62 \times 5 = 310

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### Unit 4.4 – Comparison Models

**Qn 1**

- **Sam**
  - 8 units + 200 = 1000
  - 8 units = 1000 - 200 = 800
  - 1 unit = 100
- **Julie**
- **Tom**
  - Number of oranges Sam bought = 6 \times 100 = 600

**Qn 2**

- **Ben**
- **Ken**
- **Desmond**
  - 5 units + 50 = 650
  - 5 units = 650 - 50 = 600
  - 1 unit = 600 / 5 = 120
- Number of eggs Desmond bought = 120 + 50 = 170

**Qn 3**

- **Joseph**
- **Kate**
  - Kate = 500 - 140 = 360
- **Matthew**
  - Matthew = 360 + 3 = 120
- Total marbles collected = 500 + 360 + 120 = 980

**Qn 4**

- **Sally**
- **Amy**
  - 4 units + $120 = $360
  - 4 units = $360 - $120 = $240
  - 1 unit = $240 / 4 = $60
- Amount of money Janet had = ($60 + $40) \times 2 = $200

**Qn 5**

- **Bernard**
- **Jason**
- **Desmond**
  - Number of erasers Jason has = 35 \times 2 + 40 = 110

### Unit 4.5 – External Change Concept

**Qn 1**

- **Tom**
  - 1 unit = $6
  - Amount of money David had at first = $12 + $6 = $18

**Qn 2**

- **Frankie**
  - 1 unit = -$4
  - Amount of money Frankie had at first = $6 + $4 = $10

**Qn 3**

- **Eunice**
  - 1 unit = $3
- **Grace**
  - 1 unit = $3
- Amount of money Grace had at first = $9 + $3 = $12

**Qn 4**

- **Tan**
  - 1 unit = +12
- **Lim**
  - 1 unit = -4
- Number of pies each of them had at first = 16 + 4 = 20

**Qn 5**

- **Rakesh**
  - 1 unit = 24
- **Chin Seng**
  - 1 unit = 12
- Number of stickers Rakesh had at first = 18 + 12 = 30
### Chapter 5 Length

#### Unit 5.1 – Comparison of Length

**Qn 1**
- (a) 1 m 90 cm
- (b) 70 m
- (c) 1100 m

**Qn 2**
- (a) shorter than
- (b) longer than
- (c) shorter than
- (d) shorter than

#### Unit 5.2 – Addition / Subtraction of Length

**Qn 1**
- 7 m 35 cm = 735 cm
- 2 m 25 cm = 225 cm
- Length of wire given to neighbour = 735 cm – 201 cm – 225 cm = 319 cm

**Qn 2**
- Total distance covered = 1200 m + 20 km 40 m + 6 km 20 m
= 1200 m + 20040 m + 6020 m
= 27260 m

**Qn 3**
- Length of cloth left = 4 m 50 cm – 205 cm – 120 cm
= 450 cm – 205 cm – 120 cm
= 125 cm
= 1 m 25 cm

**Qn 4**
- Total distance Joyce ran = 426 m x 6
= 2556 m
= 2 km 556 m

**Qn 5**
- Total length of 6 shelves = 430 cm x 3 + 3 m 45 cm
= 1290 cm + 345 cm
= 1635 cm
= 16 m 35 cm

**Qn 6**
- (a) Total length of string David had at first
  = 180 cm + 2 m 35 cm
  = 180 cm + 235 cm
  = 415 cm
- (b) Length of each remaining piece = 2 m 35 cm + 5
  = 235 + 5
  = 240 cm

**Qn 7**
- Length of ribbon needed for 6 presents = 60 cm x 6
  = 360 cm
- Ribbon left in the end
  = 7 m 40 cm – 360 cm – 1 m 20 cm
  = 740 cm – 360 cm – 120 cm
  = 260 cm
  = 2 m 60 cm

### Unit 5.3 – More than / Less than (Models)

**Qn 1**
- X
  - 3
- Y
  - 6
- Z
  - 3 units + 9 cm = 60 cm
  - 3 units = 60 cm – 9 = 51 cm
  - 1 unit = 51 cm + 9 = 17 cm
- Length of Stick X = 17 cm + 3 = 20 cm

**Qn 2**
- Jason
  - 62 cm
- Mother
  - 103 cm
- Father
  - 103 cm
  - 14 cm

- (a) Jason’s mother = (62 + 103) cm
  = 165 cm = 1 m 65 cm
- (b) Jason’s father = (165 + 14) cm
  = 179 cm
  = 1 m 79 cm

**Qn 3**
- Coffee table
  - 1 m 35 cm
- Dining table
  - 3 m 20 cm
- Computer table
  - 80 cm

- (a) Length of computer table = 1 m 35 cm + 80 cm
  = 135 cm + 80 cm
  = 215 cm
- (b) Total length of 3 tables
  = 2 m 15 cm + 1 m 35 cm + 3 m 20 cm + 1 m 35 cm
  = 215 cm + 135 cm + 320 cm + 135 cm
  = 805 cm

**Qn 4**
- Alex
  - 1 unit
  - 30
- Benson
  - 1 unit
  - 30
  - 45
- Calvin
  - 1 unit
  - 75
- 4 m 35 cm

- (a) Benson’s height = 110 cm + 30 cm + 45 cm
  = 185 cm
- (b) Alex’s height = 110 cm + 30 cm
  = 140 cm

**Qn 5**
- First
  - 30
- Second
  - 30
- Third
  - 30
  - 390 cm

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Qn 5 (Cont.)

4 units + 90 cm = 390 cm
4 units = 390 cm – 90 cm = 300 cm
1 unit = 300 cm ÷ 4 = 75 cm
Length of third rope = (75 cm + 30) × 2
= 210 cm = 2 m 10 cm

Unit 5.4 — Gaps And Intervals

Qn 1

Number of smaller logs = 9 m 50 cm × 50 cm
= 950 cm × 50 cm
= 19 strips
Number of cuts he needed to make = 19 – 1
= 18 cuts

Qn 2

(a) Number of gaps between 1st and 10th trees = 9
Distance between 1st and 10th trees = 9 × 140 cm
= 1260 cm = 12 m 60 cm
(b) Number of gaps between 1st and 20th trees = 19
Distance between 1st and 20th trees = 19 × 140 cm
= 2660 cm = 26 m 60 cm

Qn 3

Between 1st and the 4th lamp post = 3 gaps
3 gaps = 18 m
1 gap = 6 m
Distance between the 1st and 10th lamp post
= 9 gaps × 6 m
= 54 m

Qn 4

Every hour, the ant effectively climbed
= (50 – 20) cm = 30 cm
Time taken to reach the top
= 3 m ÷ 30 cm
= 10 h

Qn 5

120 cm

60 cm + 60 cm

30 cm + 30 cm

15 cm + 15 cm

Total distance travelled
= 120 + 60 + 60 + 30 + 30 + 15 + 15
= 330 cm = 3 m 30 cm

Unit 5.5 — Repeated Identity

Qn 1

A

B

C

1260 cm

Chapter 6 Mass

Unit 6.1 — Measure and Compare Mass in Compound Units

Qn 1

(a) 320 g (b) 450 g (c) 3 kg 700 g
(d) 3 kg 400 g (e) 2 kg 700 g (f) 2 kg 300 g
Qn 2
Water = 0 kg 800 g
Sand = 1 kg 200 g

Qn 3
(a) 7400 g, 7 kg 40 g, 7004 g
(b) 80 kg 240 g, 8240 g, 8024 g
(c) 34300 g, 34 kg 30 g, 3430 g
(d) 13300 g, 13 kg 130 g, 1330 g

Unit 6.2 – Comparison – More Than Models

Qn 1
Jerald
Gina

2 units = 152 – 44
= 108 kg
1 unit = 108 + 2
= 54 kg
Jerald’s mass = 54 + 44 = 98 kg

Qn 2
Amount list = 2 kg 200 g × 3
= 6 kg 600 g
Now he weighs = 74 kg 200 g – 6 kg 600 g
= 74200 g – 6600 g
= 67600 g
= 67 kg 600 g

Qn 3
1st
200 kg 400 g
2nd
40 kg 200 g
3rd
40 kg 200 g
30 kg 600 g

Total mass lifted
= (200 kg 400 g) × 3 + (40 kg 200 g) × 2 + 30 kg 600 g
= 712 kg 200 g

Qn 4
1 storybook
1 dictionary
2 kg 500 g

2 storybooks
4 dictionaries
2 kg 500 g
2 kg 500 g
2 kg 500 g

6 units + 10 kg = 19 kg
6 units = 19 kg – 10 kg = 9 kg
9 kg = 9000 g
1 unit = 9000 g / 6 = 1500 g
The mass of each story book is 1500 g.

Qn 5
1 toy car
1 toy robot
400 g
3 toy robots
400 g
400 g
400 g
2 toy cars

5 units + 1200 g = 4950 g
5 units = 4950 g – 1200 g
= 3750 g
1 unit = 3750 g / 5
= 750 g
The mass of each toy car is 750 g.

Qn 6
Ronald
Helen
Mr Tan

Total mass = 3 units + 20 kg + 42 kg
= 230 kg
3 units = 168 kg
1 unit = 168 / 3
= 56 kg
Mr Tan’s mass = 42 kg + 56 kg
= 98 kg

Qn 7
Tom
Fiona
Janet

4 units + 36 kg = 228 kg
4 units = 228 kg – 36 kg
= 192 kg
1 unit = 192 kg / 4
= 48 kg
Fiona’s mass = 48 kg + 12 kg
= 60 kg

Qn 8
Janet
Amanda
Eunice

Total mass = (57 kg × 3) + (12 kg × 2) + 3 kg
= 198 kg

Visit the forum page at www.onSponge.com for more challenging problem sums.
Qn 9

<table>
<thead>
<tr>
<th>Max</th>
<th>5 kg</th>
<th>5 kg</th>
<th>179 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ali</td>
<td>5 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sammy</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total mass = 4 units + 15 kg
= 179 kg

4 units = 179 kg
= 164 kg
1 unit = 164 kg ÷ 4
= 41 kg
Sammy’s mass is 41 kg.

Unit 6.3 – Repeated Identity (Mass)

Qn 1

<table>
<thead>
<tr>
<th>Daniel</th>
<th></th>
<th></th>
<th>245 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imran</td>
<td></td>
<td>20 kg</td>
<td></td>
</tr>
<tr>
<td>Rakesh</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total = 5 units + 20 kg
= 245 kg

5 units = 245 kg
= 225 kg
1 unit = 225 kg + 5
= 45 kg
Imran’s mass = 45 kg + 45 kg + 20 kg
= 110 kg

Qn 2

<table>
<thead>
<tr>
<th>Box A</th>
<th>20 kg</th>
<th>20 kg</th>
<th>20 kg</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Box B</th>
<th>20 kg</th>
<th></th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Box C</th>
<th></th>
<th></th>
<th>Difference 80 kg</th>
</tr>
</thead>
</table>

2 units + 60 kg = 80 kg
2 units = 80 kg – 60 kg
= 20 kg
1 unit = 10 kg
Mass of Box B = 10 kg + 20 kg
= 30 kg

Qn 3

Container + 5 balls = 2400 g
Container + 3 balls = 1800 g

(5 – 3 = 2) balls = 2400 g – 1800 g
= 600 g
1 ball = 300 g
3 balls = 300 g × 3
= 900 g
Mass of container = 1800 g – 900 g
= 900 g

Qn 4

<table>
<thead>
<tr>
<th>John + Daniel</th>
<th>150 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ramesh + Daniel</td>
<td>142 kg</td>
</tr>
</tbody>
</table>

(a) Difference between John and Ramesh
= 150 kg – 142 kg
= 8 kg

(b) Total = 150 kg + 142 kg
= 292 kg

Since Daniel is repeated, mass of Daniel
= 292 kg – 224 kg
= 68 kg

Qn 5

| Container + 7 glasses | 2500 g |
| Container + 3 glasses | 1500 g |

4 glasses = 1000 g
1 glass = 1000 g ÷ 4
= 250 g
3 glasses = 250 g × 3
= 750 g
Mass of container = 1500 – 750 = 750 g

Chapter 7 Volume and Capacity

Unit 7.1 – Measuring and Comparing in Scale Reading

Qn 1

| Container C | 1400 mℓ |
| Container D | 800 mℓ |

Container C has 600 mℓ more than Container D.

Qn 2

| Container E | 280 mℓ |
| Container F | 160 mℓ |

Container E has 120 mℓ more than Container F.

Qn 3

| Container G | 350 mℓ |
| Container H | 150 mℓ |

Container G has 200 mℓ more than Container H.

Qn 4

| Container J | 700 mℓ |
| Container K | 400 mℓ |

Container J has 300 mℓ more than Container K.

Unit 7.2 – Addition And Subtraction

Qn 1

| Bottle | 1500 mℓ |
| Jug   | 650 mℓ  |

Water dispenser = 650 mℓ

Water dispenser = (1500 + 650 + 6500) mℓ
= 8650 mℓ
= 8 ℓ 650 mℓ

Qn 2

| Joseph | 750 mℓ |
| Matthew | 320 mℓ |
| Serena  | 200 mℓ |

Volume of water in Serena’s water bottle
= (750 + 320 + 200) mℓ
= 1270 mℓ
= 1 ℓ 270 mℓ
Qn 3  
Beaker Z = (350 + 240 + 140) mL  
= 730 mL

Qn 4  
Bottle C = 8400 mL – 2420 mL – 3100 mL  
= 2880 mL  
= 2 ℓ 880 mL

Qn 5  
Volume of water taken from basin = 520 mL x 2  
= 1040 mL  
Volume of water left in the pail = 5400 mL – 1040 mL  
= 4360 mL

Qn 6  
Tank C = (4200 – 650 – 120) mL  
= 3430 mL  
= 3 ℓ 430 mL

Qn 7  
Total capacity = 1250 mL x 2 + 420 mL  
= 2920 mL  
= 2 ℓ 920 mL

Qn 8  
First tank = (630 + 500 + 240) mL  
= 1370 mL  
= 1 ℓ 370 mL

Qn 9  
Container C = (2400 + 500 + 300) mL  
= 3200 mL  
= 3 ℓ 200 mL

Unit 7.3 – Multiplication And Division Of Volume

Qn 1  
A
B
C 500 mL  
Total = 500 mL x 2 + 300 mL  
= 1300 mL  
= 1 ℓ 300 mL

Qn 2  
7 jugs of water = 320 mL x 7 = 2240 mL  
Total volume of water = (2240 + 460) mL  
= 2700 mL  
= 2 ℓ 700 mL

Qn 3  
Volume of water left in the drum = (600 – 350) mL  
= 250 mL  
Volume of water in each pail = 250 mL / 5  
= 50 mL

Qn 4  
Jug A
Jug B
Jug C 950 mL  
10 units = 950 mL  
1 unit = 950 / 10 = 95 mL  
Volume of water in Jug C = 95 mL x 6 = 570 mL

Chapter 8 Time

Unit 8.1 – Constructing Hour and Minute Hands

Qn 1
Unit 8.2 – Calculating Time Difference (Analog Clock)

Qn 1  3 h 30 min  Qn 2  15 min
Qn 3  3 h 15 min  Qn 4  3 h 30 min
Qn 5  2 h 15 min  Qn 6  7 h 15 min
Qn 7  3 h 30 min
Qn 8  Clock C, Clock B, Clock A
Qn 9  Clock A, Clock C, Clock B
Qn 10 Clock A, Clock C, Clock B
Qn 11 Clock C, Clock B, Clock A
Qn 12 Clock A, Clock B, Clock C
Qn 13 Clock C, Clock B, Clock A
Qn 14 Clock B, Clock C, Clock A

Unit 8.3 – Finding Ending Time

Qn 1  1 h 40 min
2 h ago 10 min ago
10.20 a.m.  11.20 a.m.  12.00 p.m.

Qn 2  1 h 5 min
2 h ago 15 min ago
6.40 a.m.  7.40 a.m.  7.45 a.m.

Qn 3  2 h 15 min
2 h ago 30 min ago
9.25 a.m.  11.25 a.m.  11.40 a.m.

Qn 4  4 h 20 min
2 h ago 30 min ago
2.30 p.m.  6.30 p.m.  6.50 p.m.

Unit 8.4 – Finding Starting Time

Qn 1  4 h ago 15 min ago
2 h ago 15 min ago
3.15 p.m.  1.15 p.m.  1.00 p.m.  12.45 p.m.

Qn 2  2 h ago 10 min ago
2 h ago 15 min ago
7.10 p.m.  5.10 p.m.  5.00 p.m.  4.50 p.m.

Qn 3  2 h ago 30 min ago
2 h ago 15 min ago
9.30 p.m.  7.30 p.m.  7.00 p.m.  6.45 p.m.

Qn 4  1 h ago 30 min ago
1 h ago 20 min ago
4.30 p.m.  3.30 p.m.  3.00 p.m.  2.40 p.m.

Chapter 9 Graphs

Unit 9.1 – Interpreting Bar Graphs

Qn 1  (a)  36  (b) Oranges
(c)  8  (d) 2
(e)  36

Qn 2  (a) Julie  (b) Jenny
(c)  9  (d) 4
(e)  37

Qn 3  (a) Lorries  (b) 20
(c)  15  (d) 3
(e)  80

Qn 4  (a)  20  (b) $10
(c)  2  (d) 130
(e)  25 \times 1 + 20 \times 50 c + 15 \times 20 c + 40 \times 10 c + 30 \times 5 c = $43.50
Qn 5
(a) 20
(b) 10
(c) 20 + 60 + 180 + 80 + 200 = 540 children

Unit 9.2 – Making Bar Graphs with Scales
Qn 1
(a) Bernard
(b) $4
(c) Leon and Derek
(d) Nicholas
(e) $56
(f) Nicholas

Qn 2
(a) 6
(b) Hot cereal
(c) Eggs
(d) Hot cereal
(e) Pancakes
(f) French toast

Chapter 10 Money
Unit 10.1 – Comparing Dollars and Cents
Qn 1 4
Qn 3 120
Qn 5 16
Qn 7 6

Unit 10.2 – Adding Dollars and Cents
Qn 1
Total amount = 5 × $2 + 12 × $0.50 + 12 × $0.10
= $10 + $6 + $1.20
= $17.20

Unit 10.3 – Subtracting Dollars and Cents
Qn 1
Total amount = 5 × $5 + 6 × $2 + 8 × $0.50 + 4 × $0.10
= $25 + $12 + $4 + $0.40
= $41.40

Qn 2
Cost of wallet = $18.25
Cost of yo-yo = $20.00

Qn 3
Total amount = 5 × $10 + 6 × $2 + 12 × $0.20 + 8 × $0.05
= $50 + $12 + $2.40 + $0.40
= $64.80

Qn 4
Total amount = 4 × $10 + 5 × $2 + 10 × $0.50 + 12 × $0.10
= $40 + $10 + $5 + $1.20
= $56.20

Qn 5
Total amount = 5 × $5 + 6 × $2 + 8 × $0.50 + 4 × $0.10
= $25 + $12 + $4 + $0.40
= $41.40

Qn 6
Total amount = 8 × $5 + 5 × $1 + 6 × $0.50 + 4 × $0.20
= $40 + $5 + $3 + $0.80
= $48.80

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Qn 1
Cost of toy train = $46.60 + $34.20
= $80.80

Qn 2
Amount Jerald received = $480 – $224
= $256
Difference in amount = $256 – $224
= $32

Qn 3
Amount Mrs Wee spent = $95.50 – $35.20
= $60.30
Difference in the amount of money spent = $60.30 – $35.20
= $25.10

Qn 4
2 units + $14 = $120
2 units = $120 – $14
= $106
1 unit = $53
Amount of money Daniel received = $53 + $14 = $67

Qn 5
Cost of pen = $8.20 – $5.60
= $2.60
Difference between pen and notebook = $5.60 – $2.60 = $3

Qn 6
2 units = $248 – $40 = $208
1 unit = $208 ÷ 2 = $104
The DVD costs $104.
Unit 10.5 – Comparison—Equal Models

Qn 1

Calvin
Rakesh

2 units = $78
1 unit = $78 / 2 = $39
Calvin must give Rakesh $39.

Qn 2

Regina
Lincoln

Difference = $244 - $120 = $124
Amount of money Regina should give Lincoln = $124 / 2 = $62

Qn 3

Daniel
Tranley

Difference = $340 - $224 = $116
Amount of money Daniel should give Tranley = $116 / 2 = $58

Qn 4

Faith
Nathaniel

Difference = $240 - $124 = $116
Amount of money Nathaniel should give Faith = $116 / 2 = $58

Qn 5

Jason
Ben

Gerald = 2 \times ($84 + $44) = $256
Total = $256 + $44 + $84 = $384
Amount of money each must have = $384 / 3 = $128
Amount of money Jason must receive from Gerald = $128 - $84 = $44
Amount of money Ben must receive from Gerald = $128 - $44 = $84

Qn 6

Sharon
Edward

1 unit = $40 - $4 = $36
Amount of money Edward had at first = $36

Qn 7

Tom
David

1 unit = $6 + $6 \rightarrow $12
Amount of money David had at first = $12 + $6 = $18

Qn 8

B
F

1 unit = $8 \times 4 = $32
Amount Frankie had at first = $32 + $8 = $40

Qn 9

Eunice
Grace

1 unit = $3 \times 3 = $9
Amount of money Grace had at first = $9 + $3 = $12

Unit 10.6 – Comparison—Less Than/Difference Models

Qn 1

Book
Pen

3 units = $15
1 unit = $15 / 3 = $5
Cost of the pen = $5

Qn 2

Calculator
Pencil box

4 units = $48
1 unit = $48 / 4 = $12
Cost of calculator = $12 \times 3 = $36

Visit the forum page at [www.onSponge.com](http://www.onSponge.com) for more challenging problem sums.
Qn 3

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pen</td>
<td>1 unit</td>
<td>$4</td>
<td>$12.50</td>
</tr>
<tr>
<td>Notebook</td>
<td>1 unit</td>
<td>$2</td>
<td>$2.00</td>
</tr>
<tr>
<td>Correction tape</td>
<td>1 unit</td>
<td>$2</td>
<td>$2.00</td>
</tr>
</tbody>
</table>

Total = 3 units + (2 x $2) + $4 = $12.50
3 units = $12.50 - $8 = $4.50
1 unit = $4.50 + 3 = $1.50
Cost of notebook = $1.50 + $2 + $4 = $7.50

Qn 4

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plasma</td>
<td></td>
<td></td>
<td>$8400</td>
</tr>
<tr>
<td>Fridge</td>
<td></td>
<td>$400</td>
<td>$400</td>
</tr>
<tr>
<td>Projector</td>
<td></td>
<td>$400</td>
<td>$400</td>
</tr>
</tbody>
</table>

4 units + $1200 = $8400
4 units = $8400 - $1200 = $7200
1 unit = $7200 + 4 = $1800
Cost of plasma television = $1800

Unit 10.7 – Guess and Check

Qn 1

<table>
<thead>
<tr>
<th>Number of 50-cent coins</th>
<th>Number of 20-cent coins</th>
<th>Total number of coins</th>
<th>Total amount of money</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>20</td>
<td>$5 + $2 = $7</td>
</tr>
<tr>
<td>12</td>
<td>8</td>
<td>20</td>
<td>$6 + $1.60 = $7.60</td>
</tr>
<tr>
<td>14</td>
<td>6</td>
<td>20</td>
<td>$7 + $1.20 = $8.20</td>
</tr>
</tbody>
</table>

Note that an increase of two 50-cent coins resulted in an increase of 60 cents in the total amount of money.

From a total of $7 to $8.20, I need to increase by $1.20, therefore I need 4 more 50-cent coins.

She had fourteen 50-cent coins.

Qn 2

<table>
<thead>
<tr>
<th>20-cent (amount)</th>
<th>10-cent (amount)</th>
<th>Total amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 x 20 c = $1.20</td>
<td>6 x 10 c = $0.60</td>
<td>$1.80</td>
</tr>
<tr>
<td>7 x 20 c = $1.40</td>
<td>5 x 10 c = $0.50</td>
<td>$1.90</td>
</tr>
<tr>
<td>9 x 20 c = $1.80</td>
<td>3 x 10 c = $0.30</td>
<td>$2.10</td>
</tr>
</tbody>
</table>

Mary had nine 20-cent coins.

Qn 3

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Price</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car wheels</td>
<td>70 x 4</td>
<td></td>
<td>280</td>
</tr>
<tr>
<td>Motorbikes wheels</td>
<td>70 x 2</td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>Total wheels</td>
<td></td>
<td></td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>80 x 4</td>
<td></td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>60 x 2</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>440</td>
</tr>
</tbody>
</table>

Qn 3 (Cont.)

Increase 10 cars = Total number of wheels increase by 20
Increase 1 car = Total number of wheels increase by 2
From 420 to 490 wheels, there is an increase of 70 wheels.

Increase of 70 wheels = 70 + 2 = 35 cars
Total number of cars = 70 + 35 = 105

<table>
<thead>
<tr>
<th>Car wheels</th>
<th>Motorbikes wheels</th>
<th>Total wheels</th>
</tr>
</thead>
<tbody>
<tr>
<td>105 x 4</td>
<td>35 x 2</td>
<td>420</td>
</tr>
<tr>
<td>35 x 2</td>
<td></td>
<td>70</td>
</tr>
</tbody>
</table>

There are 105 cars.

Qn 4

<table>
<thead>
<tr>
<th>Boys (sweets)</th>
<th>Girls (sweets)</th>
<th>Total sweets</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 x 4 = 80</td>
<td>20 x 3 = 60</td>
<td>140</td>
</tr>
<tr>
<td>22 x 4 = 88</td>
<td>18 x 3 = 54</td>
<td>142</td>
</tr>
<tr>
<td>23 x 4 = 92</td>
<td>17 x 3 = 51</td>
<td>143</td>
</tr>
</tbody>
</table>

There are 23 boys in the class.

Qn 5

<table>
<thead>
<tr>
<th>Gold (points)</th>
<th>Silver (points)</th>
<th>Total points</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 x 5 = 200</td>
<td>40 x 4 = 160</td>
<td>360</td>
</tr>
<tr>
<td>20 x 5 = 100</td>
<td>60 x 4 = 240</td>
<td>340</td>
</tr>
</tbody>
</table>

Decrease 20 gold medals = Decrease 20 points
Decrease 1 gold medal = Decrease 1 point
From 360 to 331 points, there is a decrease of 29 points.

Decrease of 29 points = Decrease of 29 gold medals
Total number of gold medals = 40 - 29 = 11

<table>
<thead>
<tr>
<th>Gold (points)</th>
<th>Silver (points)</th>
<th>Total points</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 x 5 = 55</td>
<td>69 x 4 = 276</td>
<td>331</td>
</tr>
</tbody>
</table>

There were 11 gold medals won.

Unit 10.8 – Number of units x Value of units

Qn 1

<table>
<thead>
<tr>
<th>Number</th>
<th>Value</th>
<th>Total amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10-note</td>
<td>2 units</td>
<td>$10</td>
</tr>
<tr>
<td>$2-note</td>
<td>1 unit</td>
<td>$2</td>
</tr>
</tbody>
</table>

22 units = 88
1 unit = 88 ÷ 22
= 4
Number of $10-note = 2 units
= 2 x 4
= 8

There are 11 gold medals won.
Chapter 11 Fractions

Unit 11.1 – Comparing and Ordering Fractions

Qn 1

1. \( \frac{3}{12} = \frac{5}{20} = \frac{8}{20} \)
2. \( \frac{3}{10} = \frac{6}{20} = \frac{8}{20} \)
3. \( \frac{1}{11} = \frac{7}{20} = \frac{9}{20} \)
4. \( \frac{2}{11} = \frac{5}{10} = \frac{6}{12} \)
5. \( \frac{3}{11} = \frac{4}{10} = \frac{4}{12} \)

Qn 2

1. \( \frac{3}{12} \times \frac{5}{20} = \frac{15}{240} = \frac{1}{16} \)
2. \( \frac{3}{10} \times \frac{6}{20} = \frac{18}{200} = \frac{9}{100} \)
3. \( \frac{1}{11} \times \frac{7}{20} = \frac{7}{220} \)
4. \( \frac{2}{11} \times \frac{5}{10} = \frac{10}{110} = \frac{1}{11} \)
5. \( \frac{3}{11} \times \frac{4}{12} = \frac{12}{132} = \frac{1}{11} \)

Unit 11.2 – Part Whole Fractions

Qn 1

1. Daniel, Lionel, Sam

(a) Fraction of original bar of chocolate given to Leonard

\[ \frac{4}{12} = \frac{1}{3} \]

(b) Fraction of original bar of chocolate left

\[ \frac{3}{12} = \frac{1}{4} \]

Qn 2

(a) Fraction of money spent on vegetables

\[ \frac{30}{200} = \frac{3}{20} \]

(b) Amount of money left

\[ \frac{200 - 40 - 30}{130} = \frac{130}{200} \]

Qn 3

(a) Fraction of sweets given to her brother

\[ \frac{6}{18} = \frac{1}{3} \]

(b) Number of sweets left

\[ \frac{18 - 6 - 4}{8} = \frac{8}{18} = \frac{4}{9} \]

Qn 4

(a) Number of word problems completed by 4th day

\[ \frac{4 \times 2 = 8}{20} = \frac{8}{20} \]

(b) Number of word problems completed by 7th day

\[ \frac{7 \times 2 = 14}{20} = \frac{14}{20} \]

Qn 5

(a) Distance covered by 3rd day

\[ \frac{3 \times 40 \text{ km}}{120 \text{ km}} = \frac{3}{16} \]

Visit the forum page at www.onSponge.com for more challenging problem sums.
Qn 5 (Cont.)
(b) Distance covered by 7th day = \( 7 \times 40 \) = 280 km

Fraction completed by 7th day = \( \frac{280}{640} = \frac{7}{16} \)

Fraction of journey left = \( 1 - \frac{7}{16} = \frac{9}{16} \)

Unit 11.3 – Conversion into Equivalent Fractions

Qn 1
\[
\begin{array}{c}
\frac{3}{4} = \frac{6}{8} \\
\end{array}
\]

Qn 2
\[
\begin{array}{c}
\frac{2}{3} = \frac{4}{6} \\
\end{array}
\]

Qn 3
\[
\begin{array}{c}
\frac{4}{5} = \frac{8}{10} \\
\end{array}
\]

Qn 4
\[
\begin{array}{c}
\frac{1}{3} = \frac{3}{9} \\
\end{array}
\]

Qn 5
\[
\begin{array}{c}
\frac{2}{3} = \frac{8}{12} \\
\end{array}
\]

Qn 6
\[
\begin{array}{c}
\frac{1}{3} = \frac{2}{6} \\
\end{array}
\]

Qn 7
\[
\begin{array}{c}
\frac{1}{4} = \frac{2}{8} \\
\end{array}
\]

Qn 8
\[
\begin{array}{c}
\frac{1}{6} = \frac{2}{12} \\
\end{array}
\]

Qn 9
\[
\begin{array}{c}
\frac{2}{3} = \frac{6}{9} \\
\end{array}
\]

Qn 10
\[
\begin{array}{c}
\frac{3}{4} = \frac{9}{12} \\
\end{array}
\]

Qn 11
\[
\begin{array}{c}
\frac{1}{2} = \frac{3}{6} \\
\end{array}
\]

Qn 12
\[
\begin{array}{c}
\frac{3}{5} = \frac{6}{10} \\
\end{array}
\]

Unit 11.4 – Addition of Fractions

Qn 1
Total string used = \( \frac{3}{5} \text{ m} + \frac{1}{4} \text{ m} \)
\[
= \frac{12}{20} \text{ m} + \frac{5}{20} \text{ m} = \frac{17}{20} \text{ m} \\
\]

Qn 2
Fraction of homework not completed
\[
= 1 - \frac{5}{12} - \frac{1}{4} \\
= 1 - \frac{5}{12} - \frac{3}{12} \\
= 1 - \frac{8}{12} \\
= \frac{4}{12} = \frac{1}{3} \\
\]

Qn 3
Fraction of salary left
\[
= 1 - \frac{2}{5} - \frac{1}{4} \\
= 1 - \frac{8}{20} - \frac{5}{20} \\
= \frac{13}{20} \\
= \frac{7}{20} \\
\]
Qn 4
Fraction of ice-cream left
\[ = 1 - \frac{1}{4} - \frac{2}{5} \]
\[ = 1 - \frac{5}{20} - \frac{8}{20} \]
\[ = 1 - \frac{13}{20} \]
\[ = \frac{7}{20} \]

Qn 5
Fraction of cake left
\[ = 1 - \frac{1}{5} - \frac{3}{4} \]
\[ = 1 - \frac{4}{20} - \frac{15}{20} \]
\[ = 1 - \frac{19}{20} = \frac{1}{20} \]

Unit 11.5 – Subtraction of Fractions

Qn 1
Mass of the other book
\[ = \frac{4}{5} kg - \frac{1}{2} kg \]
\[ = \frac{8}{10} kg - \frac{5}{10} kg = \frac{3}{10} kg \]

Qn 2
Fraction of cake eaten by Adam
\[ = \frac{1}{4} + \frac{1}{5} \]
\[ = \frac{5}{20} + \frac{4}{20} = \frac{9}{20} \]

Qn 2 (Cont.)
Fraction of cake left
\[ = 1 - \frac{9}{20} - \frac{1}{4} \]
\[ = 1 - \frac{9}{20} - \frac{5}{20} \]
\[ = 1 - \frac{14}{20} = \frac{6}{20} = \frac{3}{10} \]

Qn 3
Time spent to complete her English homework
\[ = \left( \frac{1}{2} + \frac{2}{5} \right) h \]
\[ = \left( \frac{5}{10} + \frac{4}{10} \right) h \]
\[ = \frac{9}{10} h \]

Qn 4
Length of cloth left
\[ = \frac{5}{6} m - \frac{3}{4} m \]
\[ = \frac{10}{12} m - \frac{9}{12} m = \frac{1}{12} m \]

Qn 5
Amount of flour used to bake the cake
\[ = \frac{4}{5} kg - \frac{1}{4} kg \]
\[ = \frac{16}{20} kg - \frac{5}{20} kg \]
\[ = \frac{11}{20} kg \]

Qn 6
(a) Fraction of students who like volleyball
\[ = 1 - \frac{2}{5} - \frac{1}{3} \]
\[ = 1 - \frac{6}{15} - \frac{5}{15} \]
\[ = 1 - \frac{11}{15} \]
\[ = \frac{4}{15} \]

Visit the forum page at www.onSponge.com for more challenging problem sums.
Qn 6 (Cont.)
(b)  

Table Tennis  Basketball  Volleyball

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2 units  =  6  
1 unit  =  3  
Total number of students in the class  =  15 \times 3  =  45

Qn 7  
(a) Fraction of people who are men
\[
\frac{1}{5} - \frac{1}{4} = \frac{1}{20} - \frac{5}{20} = \frac{13}{20} = \frac{7}{20}
\]
(b) 1 unit  =  20  
Total no of people at the funfair  =  20 \times 20  =  400

Chapter 12  Geometry

Unit 12.1  – Recognising Angle Sizes

Qn 1  2 angles  Qn 2  1 angle
Qn 3  7 angles  Qn 4  4 angles
Qn 5  
Qn 6  

<table>
<thead>
<tr>
<th>Figure</th>
<th>Number of sides</th>
<th>Number of angles inside the figure</th>
<th>Number of angles greater than a right angle</th>
<th>Number of angles smaller than a right angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(b)</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>(c)</td>
<td>7</td>
<td>7</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>(d)</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Unit 12.2  – Parallel and Perpendicular Lines

Qn 1  
(a)  

(b)  

Qn 2  

Qn 3  

Qn 4  

Qn 8  

<table>
<thead>
<tr>
<th>Figure</th>
<th>Number of sides</th>
<th>Number of angles inside the figure</th>
<th>Number of angles greater than a right angle</th>
<th>Number of angles smaller than a right angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>(b)</td>
<td>9</td>
<td>9</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>(c)</td>
<td>10</td>
<td>10</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>(d)</td>
<td>11</td>
<td>11</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Chapter 13  Area And Perimeter

Unit 13.1 – Finding Area and Perimeter with Given Sides

Qn 1
Area = 7 cm \times 5 cm
= 35 cm²
Perimeter = (7 cm + 5 cm) \times 2
= 24 cm

Qn 2
Area = 7 cm \times 4 cm
= 28 cm²
Perimeter = (7 cm + 4 cm) \times 2
= 22 cm

Qn 3
Area = 5 cm \times 5 cm
= 25 cm²
Perimeter = 5 cm \times 4
= 20 cm

Qn 4
Area = 7 cm \times 7 cm
= 49 cm²
Perimeter = 7 cm \times 4
= 28 cm

Unit 13.2 – Finding Area and Perimeter Of Composite Figures

Qn 1
Area = (8 cm \times 8 cm) + (5 cm \times 5 cm)
= 64 cm² + 25 cm²
= 89 cm²
Perimeter = (8 cm \times 2) + (13 cm \times 2)
= 16 cm + 26 cm
= 42 cm

Qn 2
Area = (10 cm \times 10 cm) + (6 cm \times 6 cm)
= 100 cm² + 36 cm²
= 136 cm²
Perimeter = (16 cm \times 2) + (10 cm \times 2)
= 32 cm + 20 cm
= 52 cm

Qn 3
Area = (9 cm \times 9 cm) + (7 cm \times 7 cm) + (4 cm \times 4 cm)
= 81 cm² + 49 cm² + 16 cm²
= 146 cm²
Perimeter = (9 + 7 + 4) cm \times 2 + 9 cm \times 2
= 40 cm + 18 cm
= 58 cm

Qn 4
Area = (3 cm \times 3 cm) + (8 cm \times 8 cm) + (5 cm \times 5 cm)
= 9 cm² + 64 cm² + 25 cm²
= 98 cm²
Perimeter = (3 + 8 + 5) cm \times 2 + 8 cm \times 2
= 32 cm + 16 cm
= 48 cm
Unit 13.3 – Finding a Side Given Its Area or Perimeter

Qn 1
(a) Twice the breadth = 200 m – 60 m – 60 m = 80 m
   Breadth = 80 m ÷ 2 = 40 m

(b) Area of field = 40 m × 60 m = 2400 m²

Qn 2
(a) Twice the breadth = 400 m – 120 m – 120 m = 160 m
   Breadth = 160 m ÷ 2 = 80 m

(b) Area of field = 120 m × 80 m = 9600 m²

Qn 3
(a) Twice the breadth = 88 cm – 24 cm – 24 cm = 40 cm
   Breadth = 40 cm ÷ 2 = 20 cm

(b) Area of table top = 24 cm × 20 cm = 480 cm²

Qn 4
Length of square = 36 cm ÷ 4 = 9 cm
Area of square = 9 cm × 9 cm = 81 cm²

Qn 5
Length of square = 48 cm ÷ 4 = 12 cm
Area of square = 12 cm × 12 cm = 144 cm²

Qn 6
Since 7 × 7 = 49
Length of square = 7 cm
Perimeter of square = 7 cm × 4 = 28 cm

Qn 7
Since 9 × 9 = 81
Length of square = 9 cm
Perimeter of square = 9 cm × 4 = 36 cm

Unit 13.4 – Proportional Sides with Given Perimeter

Qn 1
Breadth

Length

Total perimeter = 2 length + 2 breadth = 4 units + 2 units = 6 units
6 units = 30 cm
1 unit = 5 cm
(a) Breadth = 5 cm
   Length = 5 cm × 2 = 10 cm

Qn 2
Length

Breadth

Total perimeter = 2 lengths + 2 breadths = 12 units + 2 units = 14 units
14 units = 56 cm
1 unit = 4 cm
(a) Breadth = 4 cm
   Length = 4 cm × 6 = 24 cm

(b) Area = 24 cm × 4 cm = 96 cm²

Qn 3
Length

Breadth

Total perimeter = 2 length + 2 breadth = 16 units + 2 units = 16 units
16 units = 48 cm
1 unit = 3 cm
(a) Breadth = 3 cm
   Length = 3 cm × 7 = 21 cm

(b) Area = 21 cm × 3 cm = 63 cm²

Qn 4
Breadth

Length

Total perimeter = 2 length + 2 breadth = 6 units + 2 units = 8 units
6 units = 60 cm
1 unit = 10 cm
(a) Breadth = 10 cm
   Length = 10 cm × 2 = 20 cm

(b) Area = 20 cm × 10 cm = 200 cm²

Unit 13.5 – Area and Perimeter of Figure using Unit Squares

Qn 1
Area = 4 cm²; Perimeter = 10 cm
Qn 2
Area = 4 cm²; Perimeter = 10 cm
Qn 3
Area = 6 cm²; Perimeter = 14 cm
Qn 4
Area = 5 cm²; Perimeter = 14 cm
Qn 5
Area = 6 cm²; Perimeter = 16 cm
Qn 6
Area = 6 cm²; Perimeter = 16 cm
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