



# Brilliant Mathematics

Teacher's Manual

Class IV

*Written by :*  
**Author's Team**  
*(Vidyalaya Prakashan)*

**KANHA BOOKS INTERNATIONAL**  
**New Delhi**

*Sales Office :*  
**C-24, JWALA NAGAR, T.P. NAGAR, MEERUT.**  
**Ph. No. : 0121-2400630, 08899271392**

*Head Office :*  
**A-102, CHANDAR VIHAR, DELHI-92**  
**e-mail : vidyalayaprakashan@yahoo.co.in**  
**: vidyalayaprakashan@gmail.com**  
**Website : vidyalayaprakashan.in**

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# Mathematics - IV

## Chapter 1 : Revision

### Exercise 1A

1. (a) 4260      (b) 2846      (c) 7275      (d) 9684
2. (a) Three thousand seventy five  
(b) Three thousand eight hundred five  
(c) Four thousand seven hundred twenty six  
(d) Nine thousand four hundred seventy
3. (a) 5357, 5367, 5377      (b) 1450, 1500, 1550  
(c) 3856, 3858, 3860      (d) 9123, 9128, 9133
4. (a) 3985      (b) 4652
5. (a) 3568      (b) 8139
6. (a)  $7000 + 0 + 70 + 4$       (b)  $8000 + 600 + 0 + 3$
7. (a) 8320      (b) 9323
8. (a) 4039, 4450, 5518, 6216, 7016  
(b) 5139, 9135, 9153, 9513, 9531
9. (a) 6852, 6825, 6582, 6528  
(b) 7584, 7548, 7485, 7458
10. (a) 3      (b) 60      (c) 8000      (d) 100
11. (a) 9507, 9509      (b) 8989, 8991  
(c) 4390, 4392      (d) 8119, 8121
12. (a) XVII      (b) V      (c) XXVIII      (d) XXXI

### Exercise 1B

1. (a) 
$$\begin{array}{r} \textcircled{2} \textcircled{2} \textcircled{1} \\ 3 \ 5 \ 3 \ 4 \\ 2 \ 9 \ 9 \ 4 \\ + 8 \ 8 \ 3 \\ \hline 7 \ 4 \ 1 \ 1 \end{array}$$
- (b) 
$$\begin{array}{r} \textcircled{2} \textcircled{1} \textcircled{1} \\ 3 \ 8 \ 8 \ 3 \\ 3 \ 8 \ 8 \ 7 \\ + 6 \ 0 \ 8 \\ \hline 8 \ 3 \ 7 \ 8 \end{array}$$
- (c) 
$$\begin{array}{r} \textcircled{2} \textcircled{1} \textcircled{1} \\ 3 \ 9 \ 1 \ 7 \\ 4 \ 9 \ 3 \ 2 \\ + 3 \ 8 \ 7 \\ \hline 9 \ 2 \ 3 \ 6 \end{array}$$

$$2. (a) \begin{array}{r} 9253 \\ -6706 \\ \hline 2547 \end{array} \quad (b) \begin{array}{r} 6345 \\ -2785 \\ \hline 3560 \end{array} \quad (c) \begin{array}{r} 6007 \\ -2928 \\ \hline 3079 \end{array}$$

$$3. (a) \begin{array}{r} 95 \\ \times 27 \\ \hline 665 \\ 190 \times \\ \hline 2565 \end{array} \quad (b) \begin{array}{r} 83 \\ \times 39 \\ \hline 747 \\ 249 \times \\ \hline 3237 \end{array}$$

$$(c) \begin{array}{r} 6 \overline{)3456} \overline{)576} \\ -30 \\ \hline 45 \\ -42 \\ \hline 36 \\ -36 \\ \hline \times \end{array} \quad (d) \begin{array}{r} 5 \overline{)1995} \overline{)399} \\ -15 \\ \hline 49 \\ -45 \\ \hline 45 \\ -45 \\ \hline \times \end{array}$$

$$4. (a) \frac{1}{4} \quad (b) \frac{1}{8} \quad (c) \frac{3}{8} \quad (d) \frac{3}{5}$$

$$5. (a) \frac{9+8}{19} = \frac{17}{19} \quad (b) \frac{19+5}{33} = \frac{24}{33}$$

$$(c) \frac{13-4}{17} = \frac{9}{17} \quad (d) \frac{26-5}{29} = \frac{21}{29}$$

$$6. (a) > \quad (b) > \quad (c) > \quad (d) >$$

$$7. (a) \begin{array}{r} \text{₹} \quad \text{P} \\ 13 \quad 25 \\ + 29 \quad 30 \\ \hline 42 \quad . \quad 55 \end{array} \quad (b) \begin{array}{r} \text{₹} \quad \text{P} \\ 133 \quad 25 \\ 379 \quad 85 \\ + 102 \quad . \quad 50 \\ \hline 615 \quad . \quad 60 \end{array} \quad (c) \begin{array}{r} \text{₹} \quad \text{P} \\ 379 \quad 25 \\ - 199 \quad 75 \\ \hline 179 \quad . \quad 50 \end{array}$$

$$(d) \begin{array}{r} \text{kg} \quad \text{g} \\ 301 \quad 20 \\ - 78 \quad 75 \\ \hline 222 \quad . \quad 45 \end{array} \quad (e) \begin{array}{r} \text{m} \quad \text{cm} \\ 124 \quad 50 \\ \times 8 \\ \hline 996 \quad . \quad 00 \end{array} \quad (f) \begin{array}{r} \text{l} \quad \text{ml} \\ 565 \quad 75 \\ \times 9 \\ \hline 5091 \quad . \quad 75 \end{array}$$

$$(g) \text{ Do yourself} \quad (h) \text{ Do yourself} \quad (i) \text{ Do yourself}$$





### Chapter 3 : Addition

#### Exercise 3A

<b>1. (a)</b> <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="text-align: right;">T-Th</td> <td style="text-align: right;">Th</td> <td style="text-align: right;">H T O</td> <td></td> </tr> <tr> <td style="text-align: right;"><math>\textcircled{0}</math></td> <td style="text-align: right;"><math>\textcircled{0}</math></td> <td style="text-align: right;"><math>\textcircled{0}</math></td> <td></td> </tr> <tr> <td style="text-align: right;">4</td> <td style="text-align: right;">3</td> <td style="text-align: right;">6 7 6</td> <td></td> </tr> <tr> <td style="text-align: right;">+ 2</td> <td style="text-align: right;">7</td> <td style="text-align: right;">4 3 2</td> <td></td> </tr> <tr> <td colspan="3" style="border-top: 1px solid black;"></td> <td></td> </tr> <tr> <td style="text-align: right;">7</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1 0 6</td> <td></td> </tr> </table>	T-Th	Th	H T O		$\textcircled{0}$	$\textcircled{0}$	$\textcircled{0}$		4	3	6 7 6		+ 2	7	4 3 2						7	1	1 0 6		<b>(b)</b> <table style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="text-align: right;">T-Th</td> <td style="text-align: right;">Th</td> <td style="text-align: right;">H T O</td> <td></td> </tr> <tr> <td style="text-align: right;"><math>\textcircled{0}</math></td> <td style="text-align: right;"><math>\textcircled{0}</math></td> <td style="text-align: right;"><math>\textcircled{0}</math> <math>\textcircled{0}</math></td> <td></td> </tr> <tr> <td style="text-align: right;">4</td> <td style="text-align: right;">8</td> <td style="text-align: right;">4 7 6</td> <td></td> </tr> <tr> <td style="text-align: right;">+ 8</td> <td style="text-align: right;">7</td> <td style="text-align: right;">5 4 8</td> <td></td> </tr> <tr> <td colspan="3" style="border-top: 1px solid black;"></td> <td></td> </tr> <tr> <td style="text-align: right;">13</td> <td style="text-align: right;">6</td> <td style="text-align: right;">0 2 4</td> <td></td> </tr> </table>	T-Th	Th	H T O		$\textcircled{0}$	$\textcircled{0}$	$\textcircled{0}$ $\textcircled{0}$		4	8	4 7 6		+ 8	7	5 4 8						13	6	0 2 4	
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+ 2 5 1 4 5																																											
7 1 2 9 7																																											

### Exercise 3B

$$\begin{array}{r}
 1. \quad 3\ 6\ 7\ 4\ 8\ 5 \\
 + 3\ 4\ 2\ 4\ 5 \\
 \hline
 4\ 0\ 1\ 7\ 3\ 0
 \end{array}$$

2. Money deposited by businessman	₹ 2 4 5 6 7
Money deposited after two months	+ ₹ 3 6 7 4 9
Total money deposited	<u>₹ 6 1 3 1 6</u>

3. (a) No. of males in town	4 5 6 7 2
No. of females in town	+ 3 5 6 5 4
Total population	<u>8 1 3 2 6</u>

4. Cost of sofa	₹ 3 5 6 2 4
Cost of dining set	+ ₹ 2 4 7 2 5
Total money paid	<u>₹ 6 0 3 4 9</u>

5. Population of 1st block	3 2 6 7 5
Population of II <sup>nd</sup> block	2 4 7 5 4
Population of III <sup>rd</sup> block	3 7 6 0 8
Population of IV <sup>th</sup> block	+ 2 0 5 0 5
Total population of colony	<u>1 1 5 5 4 2</u>

6. No. of Hindi books	2 8 5 6 7
No. of English books	4 5 6 7 4
No. of Maths books	+ 5 6 7 8
Total no. of books	<u>7 9 9 1 9</u>

7. Ajay's income in 2018	₹ 2 4 0 0 0 0
In 2019 income increased by	+ ₹ 3 5 6 8 0
Income in 2019	<u>₹ 2 7 5 6 8 0</u>
Total Earning in two years	2 4 0 0 0 0
2018 =	+ 2 7 5 6 8 0
2019 =	<u>5 1 5 6 8 0</u>



$$\begin{array}{r}
 8. \text{ (a)} \quad 85994 \\
 + 240885 \\
 \hline
 \underline{326879}
 \end{array}$$

9. Persons visited zoo on

Sunday	35678
Monday	45729
Tuesday	+ 32678
Total no. of persons visited	<u>114085</u>

$$\begin{array}{r}
 10. \quad 48326 \\
 + 85014 \\
 \hline
 \underline{133340} \text{ is the bigger number}
 \end{array}$$

### Chapter 4 : Subtraction

#### Exercise 4A

$$\begin{array}{r}
 1. \text{ (a)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 5 & 4 & 327 & \\ - 2 & 6 & 978 & \\ \hline \underline{2} & \underline{7} & \underline{349} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 9 & 2 & 342 & \\ - 5 & 4 & 568 & \\ \hline \underline{3} & \underline{7} & \underline{774} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 8 & 5 & 863 & \\ - 4 & 2 & 794 & \\ \hline \underline{4} & \underline{3} & \underline{069} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(d)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 4 & 2 & 562 & \\ - 3 & 1 & 998 & \\ \hline \underline{1} & \underline{0} & \underline{564} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(e)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 4 & 2 & 634 & \\ - 2 & 4 & 564 & \\ \hline \underline{1} & \underline{8} & \underline{070} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(f)} \quad \begin{array}{cccc} \text{T-Th} & \text{Th} & \text{H T O} & \\ 8 & 5 & 674 & \\ - 4 & 8 & 935 & \\ \hline \underline{3} & \underline{6} & \underline{739} & \end{array}
 \end{array}$$

$$\begin{array}{r}
 2. \text{ (a)} \quad 56742 \\
 - 39854 \\
 \hline
 \underline{16888}
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad 86074 \\
 - 73928 \\
 \hline
 \underline{12146}
 \end{array}$$

<p>(c) <math display="block">\begin{array}{r} 88453 \\ - 35986 \\ \hline 52467 \end{array}</math></p> <p>3. <math display="block">\begin{array}{r} 48321 \\ - 25675 \\ \hline 22646 \end{array}</math></p> <p>6. <math display="block">\begin{array}{r} 24356 \\ + 35714 \\ \hline 60070 \end{array}</math></p> <p>7. <math display="block">\begin{array}{r} 70000 \\ - 16200 \\ \hline 53800 \end{array}</math></p> <p>8. (a) <math display="block">\begin{array}{r} \text{T-Th Th H T O} \\ 7 \quad 9 \quad 7 \quad 0 \quad 5 \\ - 5 \quad 8 \quad 3 \quad 0 \quad 0 \\ \hline 2 \quad 1 \quad 4 \quad 0 \quad 5 \end{array}</math></p>	<p>(d) <math display="block">\begin{array}{r} 359674 \\ - 248996 \\ \hline 110678 \end{array}</math></p> <p>4. <math display="block">\begin{array}{r} 945672 \\ - 84567 \\ \hline 861105 \end{array}</math></p> <p>5. <math display="block">\begin{array}{r} 100000 \\ - 55555 \\ \hline 44445 \end{array}</math></p> <p>985327</p> <p><math display="block">\begin{array}{r} - 60070 \\ \hline 925257 \end{array}</math></p> <p>2400000</p> <p><math display="block">\begin{array}{r} - 1314000 \\ \hline 1086000 \end{array}</math></p> <p>(b) <math display="block">\begin{array}{r} \text{L T-Th Th H T O} \\ 2 \quad 0 \quad 0 \quad 0 \quad 0 \quad 5 \\ - \quad 5 \quad 3 \quad 4 \quad 6 \quad 7 \\ \hline 1 \quad 4 \quad 6 \quad 5 \quad 3 \quad 8 \end{array}</math></p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

#### Exercise 4B

1. Rahul's earning per month	₹ 2 5 5 6 0
Monthly expenditure	- ₹ 1 5 7 8 0
His savings per month	<u>₹ 9 7 8 0</u>
2. Money with Arpit	₹ 6 4 7 0 0 0
Spend on buying car	- ₹ 5 8 6 3 9 4
Money left with Arpit	<u>₹ 6 0 6 0 6</u>
3. Milk Supplied to cities	2 5 3 4 0 l
	+ 1 7 3 4 6 l
Total milk supplied in a day	<u>4 2 6 8 6 l</u>
	5 0 6 7 0 l
Milk produced in a day	- 4 2 6 8 6 l
Milk supplied	<u>7 9 8 4 l</u>
Milk left with the dairy	

- |                                                                                                                                                            |                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <p>4. Total population of town</p> <p style="padding-left: 20px;">No. of males in town</p> <p style="padding-left: 20px;">No. of females in town</p>       | $\begin{array}{r} 1\ 3\ 5\ 7\ 4\ 8 \\ -\ 5\ 7\ 8\ 9\ 4 \\ \hline 7\ 7\ 8\ 5\ 4 \end{array}$                                         |
| <p>5. <math display="block">\begin{array}{r} 8\ 0\ 4\ 5\ 6 \\ -\ 3\ 9\ 9\ 8\ 4 \\ \hline 4\ 0\ 4\ 7\ 2 \end{array}</math> is the other number</p>          | <p>6. <math display="block">\begin{array}{r} 7\ 2\ 3\ 4\ 5 \\ -\ 2\ 6\ 7\ 4\ 5 \\ \hline 4\ 5\ 6\ 0\ 0 \end{array}</math></p>       |
| <p>7. <math display="block">\begin{array}{r} 8\ 9\ 5\ 4\ 2 \\ -\ 5\ 9\ 3\ 8\ 2 \\ \hline 3\ 0\ 1\ 6\ 0 \end{array}</math> should be subtracted</p>         | <p>8. <math display="block">\begin{array}{r} 2\ 4\ 5\ 3\ 6\ 2 \\ -\ 7\ 5\ 9\ 8\ 3 \\ \hline 1\ 6\ 9\ 3\ 7\ 9 \end{array}</math></p> |
| <p>9. Cost of flat</p> <p style="padding-left: 20px;">Money with Rinku</p> <p style="padding-left: 20px;">Money needed move to buy flat</p>                | $\begin{array}{r} ₹\ 9\ 8\ 4\ 3\ 0\ 0 \\ -\ ₹\ 8\ 9\ 4\ 9\ 8\ 0 \\ \hline ₹\ 8\ 9\ 3\ 2\ 0 \end{array}$                             |
| <p>10. Money deposited by Suresh</p> <p style="padding-left: 20px;">Money withdrawn for expenses</p> <p style="padding-left: 20px;">Balance in his a/c</p> | $\begin{array}{r} ₹\ 9\ 4\ 5\ 6\ 7\ 4 \\ -\ ₹\ 7\ 6\ 5\ 3\ 8\ 4 \\ \hline ₹\ 1\ 8\ 0\ 2\ 9\ 0 \end{array}$                          |

### Chapter 5 : Multiplication

#### Exercise 5A

1. (a)  $215 \times 4 = 860$                       (b)  $206 \times 5 = 1030$   
     (c)  $184 \times 3 = 552$                       (d)  $506 \times 6 = 3036$   
     (e)  $394 \times 7 = 2758$                     (f)  $613 \times 8 = 4904$
2. (a) 198                      (b) 153                      (c) 1530  
     (d) 0                        (e) 28                        (f) 1150
3. (a) 15                        (b) 7                        (c) 8                        (d) 25

#### Exercise 5B

1. (a) 480                      (b) 3200                    (c) 6400                    (d) 21200  
     (e) 3125000                (f) 4840000                (g) 303000                (h) 354000
2. (a) 242                      (b) 100                      (c) 195000                (d) 400

**Exercise 5C**

$$\begin{array}{r}
 1. \text{ (a)} \quad 235 \\
 \quad \times 16 \\
 \hline
 1410 \\
 235 \times \\
 \hline
 \underline{3760}
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad 475 \\
 \quad \times 25 \\
 \hline
 2375 \\
 950 \times \\
 \hline
 \underline{11875}
 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad 418 \\
 \quad \times 42 \\
 \hline
 836 \\
 1672 \times \\
 \hline
 \underline{17556}
 \end{array}$$

$$\begin{array}{r}
 \text{(d)} \quad 256 \\
 \quad \times 18 \\
 \hline
 2048 \\
 256 \times \\
 \hline
 \underline{4608}
 \end{array}$$

$$\begin{array}{r}
 \text{(e)} \quad 1218 \\
 \quad \times 24 \\
 \hline
 4872 \\
 2436 \times \\
 \hline
 \underline{29232}
 \end{array}$$

$$\begin{array}{r}
 \text{(f)} \quad 254 \\
 \quad \times 238 \\
 \hline
 2032 \\
 762 \times \\
 508 \times \times \\
 \hline
 \underline{60452}
 \end{array}$$

$$\begin{array}{r}
 \text{(g)} \quad 555 \\
 \quad \times 546 \\
 \hline
 3330 \\
 2220 \times \\
 2775 \times \times \\
 \hline
 \underline{303030}
 \end{array}$$

$$\begin{array}{r}
 \text{(h)} \quad 5474 \\
 \quad \times 240 \\
 \hline
 0000 \\
 21896 \times \\
 10948 \times \times \\
 \hline
 \underline{1313760}
 \end{array}$$

$$\begin{array}{r}
 \text{(i)} \quad 5760 \\
 \quad \times 140 \\
 \hline
 0000 \\
 23040 \times \\
 5760 \times \times \\
 \hline
 \underline{806400}
 \end{array}$$

$$\begin{array}{r}
 \text{(j)} \quad 4040 \\
 \quad \times 133 \\
 \hline
 12120 \\
 12120 \times \\
 4040 \times \times \\
 \hline
 \underline{537320}
 \end{array}$$

$$\begin{array}{r}
 \text{(k)} \quad 4990 \\
 \quad \times 356 \\
 \hline
 29940 \\
 24950 \times \\
 14970 \times \times \\
 \hline
 \underline{1776440}
 \end{array}$$

$$\begin{array}{r}
 \text{(l)} \quad 1321 \\
 \quad \times 3214 \\
 \hline
 5284 \\
 1321 \times \\
 2642 \times \times \\
 3963 \times \times \times \\
 \hline
 \underline{4245694}
 \end{array}$$

**Exercise 5D**

1. No. of bricks in one truck

2750

No. of bricks in 235 truck

 $\times 235$  $\underline{13750}$ 8250  $\times$ 5500  $\times \times$  $\underline{646250}$ 

bricks

2. No. of days in June	3 0	
No. of hours in 1 day	$\times 2 4$	
Total no. of house in June	<u>1 2 0</u>	
	6 0 $\times$	
	<u>7 2 0</u>	hours

3. No. of paper in one packet	1 4 4	
No. of sheets in 25 packets	$\times 2 5$	
	<u>7 2 0</u>	
	2 8 8 $\times$	
	<u>3 6 0 0</u>	sheets

4. Weight in one box = 98 kg  
 Weight in 188 boxes =  $98 \times 188 = 18424$  kg

5. No. of students in school	1 1 5 4	
fees paid by each student	$\text{₹} \times 3 5 0$	
Total monthly collection	<u>0 0 0 0</u>	
	5 7 7 0 $\times$	
	3 4 6 2 $\times \times$	
	<u>₹ 4 0 3 9 0 0</u>	

6. Mobile sets produced in 1 day	3 0 9	
Mobile set produced in 275 days	$\times 2 7 5$	
	<u>1 5 4 5</u>	
	2 1 6 3 $\times$	
	6 1 8 $\times \times$	
	<u>8 4 9 7 5</u>	sets

7. No. of books in carton 16  
 No. of copies of books 25  
 Total no. of books in one carton =  $16 \times 25 = 400$  books  
 No. of books in 160 cartons =  $160 \times 400 = 64000$  books

8. Loaves of bread baked in 1 day  
 No. of loaves baked in 1 year  
 (1 year = 365 days)

$$\begin{array}{r}
 1\ 6\ 5\ 7 \\
 \times\ 3\ 6\ 5 \\
 \hline
 8\ 2\ 8\ 5 \\
 9\ 9\ 4\ 2\ \times \\
 4\ 9\ 7\ 1\ \times\ \times \\
 \hline
 \underline{\underline{6\ 0\ 4\ 8\ 0\ 5}}
 \end{array}$$

**Chapter 6 : Division**  
**Exercise 6A**

1. (a)  $3 \overline{)801} (270$

$$\begin{array}{r}
 -6 \\
 \hline
 21 \\
 -21 \\
 \hline
 0
 \end{array}$$

$Q = 270, R = 0, D = 3$   
 $= 270 \times 3 = 810$

(b)  $8 \overline{)7380} (922$

$$\begin{array}{r}
 -72 \\
 \hline
 18 \\
 -16 \\
 \hline
 20 \\
 -16 \\
 \hline
 4
 \end{array}$$

$Q = 922, R = 4, D = 8$   
 $922 \times 8 + 4 = 7380$

(c)  $9 \overline{)9354} (1039$

$$\begin{array}{r}
 -9 \\
 \hline
 35 \\
 -27 \\
 \hline
 84 \\
 -81 \\
 \hline
 3
 \end{array}$$

$Q = 1039, R = 3, D = 9$   
 $= 1039 \times 9 + 3 = 9354$

(d)  $7 \overline{)8503} (1274$

$$\begin{array}{r}
 -7 \\
 \hline
 15 \\
 -14 \\
 \hline
 10 \\
 -7 \\
 \hline
 33 \\
 28 \\
 \hline
 05
 \end{array}$$

$Q = 1274, R = 5, D = 7$   
 $1274 \times 7 + 5 = 8503$

$$\begin{array}{r}
 \text{(e)} \quad 6 \overline{)2592} \overline{)432} \\
 \underline{-24} \\
 19 \\
 \underline{-18} \\
 12 \\
 \underline{-12} \\
 \times
 \end{array}$$

$$\begin{aligned}
 Q &= 432, R = 0, D = 6 \\
 &= 432 \times 6 = 2592
 \end{aligned}$$

$$\begin{array}{r}
 \text{(f)} \quad 7 \overline{)4158} \overline{)594} \\
 \underline{-35} \\
 65 \\
 \underline{-63} \\
 28 \\
 \underline{-28} \\
 \times
 \end{array}$$

$$\begin{aligned}
 Q &= 594, R = 0, D = 7 \\
 &= 594 \times 7 = 4158
 \end{aligned}$$

$$\begin{array}{r}
 \text{(g)} \quad 5 \overline{)62215} \overline{)12443} \\
 \underline{-5} \\
 12 \\
 \underline{-10} \\
 22 \\
 \underline{-20} \\
 21 \\
 \underline{-20} \\
 15 \\
 \underline{-15} \\
 \times
 \end{array}$$

$$\begin{aligned}
 Q &= 12443, R = 0, D = 5 \text{ (i)} \\
 &= 12443 \times 5 = 62215
 \end{aligned}$$

$$\begin{array}{r}
 \text{(h)} \quad 7 \overline{)25431} \overline{)3633} \\
 \underline{-21} \\
 44 \\
 \underline{-42} \\
 23 \\
 \underline{-21} \\
 21 \\
 \underline{-21} \\
 \times
 \end{array}$$

$$\begin{aligned}
 Q &= 3633, R = 0, D = 7 \\
 &= 3633 \times 7 = 25431
 \end{aligned}$$

$$\begin{array}{r}
 \text{(i)} \quad 6 \overline{)71552} \overline{)11925} \\
 \underline{-6} \\
 11 \\
 \underline{-6} \\
 55 \\
 \underline{-54} \\
 15 \\
 \underline{-12} \\
 32 \\
 \underline{-30} \\
 2
 \end{array}$$

$$\begin{aligned}
 Q &= 11925, R = 2, D = 6 \\
 &= 11925 \times 6 + 2 = 71552
 \end{aligned}$$

$$(j) \quad 5 \overline{)76425} \overline{)15285}$$

$$\begin{array}{r} -5 \\ \hline 26 \\ -25 \\ \hline 14 \\ -10 \\ \hline 42 \\ -40 \\ \hline 25 \\ -25 \\ \hline \times \\ \hline \end{array}$$

$$Q = 15285, R = 0, D = 5$$

$$15285 \times 5 = 76425$$

$$2. (a) \quad 251$$

$$(b) \quad 1$$

$$(c) \quad 1234$$

$$(d) \quad 1$$

$$(e) \quad 0$$

$$(f) \quad 0$$

### Exercise 6B

$$1. (a) \quad 12 \overline{)957} \overline{)79}$$

$$\begin{array}{r} -84 \\ \hline 117 \\ 108 \\ \hline 9 \\ \hline \end{array}$$

$$Q = 79, R = 9, D = 12$$

$$= 79 \times 12 + 9 = 957$$

$$(b) \quad 15 \overline{)850} \overline{)56}$$

$$\begin{array}{r} -75 \\ \hline 100 \\ -90 \\ \hline 10 \\ \hline \end{array}$$

$$Q = 56, R = 10, D = 15$$

$$56 \times 15 + 10 = 850$$

$$(c) \quad 21 \overline{)7506} \overline{)357}$$

$$\begin{array}{r} -63 \\ \hline 120 \\ -105 \\ \hline 156 \\ -147 \\ \hline 9 \\ \hline \end{array}$$

$$Q = 357, R = 9, D = 21$$

$$= 357 \times 21 + 9 = 7506$$

$$(d) \quad 52 \overline{)9005} \overline{)173}$$

$$\begin{array}{r} -52 \\ \hline 380 \\ -364 \\ \hline 165 \\ -153 \\ \hline 12 \\ \hline \end{array}$$

$$Q = 173, R = 12$$

$$173 \times 52 + 12 = 9005$$



$$\begin{array}{r}
 \text{(e)} \quad 37 \overline{)5083} \begin{array}{l} 137 \\ -37 \\ \hline 138 \\ -111 \\ \hline 273 \\ -259 \\ \hline 14 \end{array} \\
 \hline
 \end{array}$$

$$\begin{aligned}
 Q &= 137, R = 14, D = 37 \\
 &= 137 \times 37 + 14 = 5083
 \end{aligned}$$

$$\begin{array}{r}
 \text{(f)} \quad 72 \overline{)25542} \begin{array}{l} 354 \\ -216 \\ \hline 394 \\ -360 \\ \hline 342 \\ -288 \\ \hline 54 \end{array} \\
 \hline
 \end{array}$$

$$\begin{aligned}
 Q &= 354, R = 54 \\
 &= 354 \times 72 + 54 = 25542
 \end{aligned}$$

$$\begin{array}{r}
 \text{(g)} \quad 68 \overline{)82576} \begin{array}{l} 1214 \\ -68 \\ \hline 145 \\ -136 \\ \hline 97 \\ -68 \\ \hline 296 \\ -272 \\ \hline 24 \end{array} \\
 \hline
 \end{array}$$

$$1214 \times 68 + 24 = 82576$$

$$\begin{array}{r}
 \text{(h)} \quad 26 \overline{)44152} \begin{array}{l} 1698 \\ -26 \\ \hline 181 \\ -156 \\ \hline 255 \\ -234 \\ \hline 212 \\ -208 \\ \hline 04 \end{array} \\
 \hline
 \end{array}$$

$$1698 \times 26 + 4 = 44152$$

$$\begin{array}{r}
 \text{2. (a)} \quad 46 \overline{)8853} \begin{array}{l} 192 \\ -46 \\ \hline 425 \\ -414 \\ \hline 113 \\ -92 \\ \hline 21 \end{array} \\
 \hline
 \end{array}$$

$$Q = 192, R = 21$$

$$\begin{array}{r}
 \text{(b)} \quad 25 \overline{)8646} \begin{array}{l} 345 \\ -75 \\ \hline 114 \\ -100 \\ \hline 146 \\ -125 \\ \hline 21 \end{array} \\
 \hline
 \end{array}$$

$$Q = 345, R = 21$$

$$\begin{array}{r}
 \text{(c)} \quad 44 \overline{)9837} \overline{)223} \\
 \underline{-88} \\
 103 \\
 \underline{-88} \\
 157 \\
 \underline{-132} \\
 25
 \end{array}$$

$$Q = 223, R = 44$$

$$\begin{array}{r}
 \text{(d)} \quad 75 \overline{)33198} \overline{)442} \\
 \underline{-300} \\
 319 \\
 \underline{-300} \\
 198 \\
 \underline{-150} \\
 48
 \end{array}$$

$$Q = 442, R = 48$$

$$\begin{array}{r}
 \text{(e)} \quad 68 \overline{)70434} \overline{)1035} \\
 \underline{-68} \\
 243 \\
 \underline{-204} \\
 394 \\
 \underline{-340} \\
 54
 \end{array}$$

$$Q = 1035, R = 54$$

$$\begin{array}{r}
 \text{(f)} \quad 18 \overline{)96008} \overline{)5333} \\
 \underline{-90} \\
 60 \\
 \underline{-54} \\
 60 \\
 \underline{-54} \\
 68 \\
 \underline{-54} \\
 12
 \end{array}$$

$$Q = 5333, R = 12$$

#### Exercise 6C

1. (a)  $\frac{8342}{10}$   $Q = 834, R = 2$       (b)  $\frac{816}{10}$   $Q = 81, R = 6$   
 (c)  $\frac{20042}{100}$   $Q = 200, R = 42$       (d)  $\frac{6301}{1000}$   $Q = 6, R = 301$   
 (e)  $\frac{54321}{10}$   $Q = 5432, R = 1$       (f)  $\frac{55913}{100}$   $Q = 559, R = 13$   
 (g)  $\frac{31323}{1000}$   $Q = 31, R = 323$       (h)  $\frac{55663}{100}$   $Q = 556, R = 63$

#### Exercise 6D

1. (a) Crates loaded in truck      92

No. of trucks needed to load 11592 crate

$$11592 \div 92 = 126 \text{ trucks}$$

2.  $14049 \div 21 = 669$

3. No. of trees in garden      4368

No. of trees in each row    13

No. of rows =  $4368 \div 13 = 336$  rows

4. No. of apples = 13612

No. of persons = 43

No. of apples each person get =

$$\begin{array}{r} 43 \overline{)13612} \text{ (316} \\ -129 \phantom{0} \\ \hline 71 \phantom{0} \\ -43 \phantom{0} \\ \hline 282 \phantom{0} \\ -258 \phantom{0} \\ \hline 24 \phantom{0} \end{array}$$

No. of apples each person get = 316 apples

No. of apples remain undivided = 24

5. No. of biscuits in one packet = 24

No. of biscuits = 35644

No. of packets required

$$\begin{array}{r} 24 \overline{)35644} \text{ (1485} \\ -24 \phantom{0} \\ \hline 116 \phantom{0} \\ -96 \phantom{0} \\ \hline 204 \phantom{0} \\ -192 \phantom{0} \\ \hline 124 \phantom{0} \\ -120 \phantom{0} \\ \hline 04 \phantom{0} \end{array}$$

No. of packets = 1485

No. of biscuits left = 4

6. No. of mangoes bought    8 5 3 9 4

No. of mangoes rotten        2 2 1

Remaining mangoes        8 5 1 7 3

$$\begin{array}{r} 89 \overline{)85173} \text{ (957} \\ -801 \phantom{0} \\ \hline 507 \phantom{0} \\ -445 \phantom{0} \\ \hline 623 \phantom{0} \\ -623 \phantom{0} \\ \hline \phantom{0} \times \phantom{0} \end{array}$$

No. of boxes = 89

No. of mangoes in each box = 957

7. Greatest number of 6 digits 999999

Product of  $12 \times 8$   $96 \overline{)999999} (10416$

$$\begin{array}{r} -96 \\ \hline 399 \\ -384 \\ \hline 159 \end{array}$$

Q = 10416, R = 63

$$\begin{array}{r} -96 \\ \hline 639 \\ -576 \\ \hline 63 \end{array}$$

8. Money with the man ₹ 271355

No. of sons & daughters  $4 + 3 = 7$

Money each child get = ₹ 38765

$7 \overline{)271355} (38765$

$$\begin{array}{r} -21 \\ \hline 61 \\ -56 \\ \hline 53 \\ -49 \\ \hline 45 \\ -42 \\ \hline 35 \\ -35 \\ \hline \times \end{array}$$

### Chapter 7 : Unitary Method

1. Cost of 12 pencils ₹ 24

Cost of 1 pencils  $24 \div 12 = 2$

Cost of 144 pencils =  $2 \times 144 = ₹ 288$

2. Train fare for 3 passengers ₹ 540

Fare of 1 passenger =  $540 \div 3 = ₹ 180$

Fare for 5 passengers =  $180 \times 5 = ₹ 900$

3. Cost of 15 kg vegetable = ₹ 840

Cost of 5 kg vegetables =  $\frac{840 \times 5}{15} = ₹ 280$

4. No. of cycles produced in 12 days = 3000

$$\text{No. of cycles produced in 30 days} = \frac{3000 \times 30}{12} \text{ cycles}$$

5. 45 buses can carry 2340 passengers

$$\text{No. of passengers 36 buses can carry} = \frac{2340 \times 36}{45} = 1872 \text{ passage}$$

6. No. of boxes required to pack 300 cup plates

No. of cup plates that can be packed in 20 boxes

$$= \frac{300 \times 20}{25} = 240 \text{ cup plates}$$

7. Distance covered by bus in 5 hrs = 240 km

$$\text{Distance covered in 7 hrs} = \frac{240 \times 7}{5} = 336 \text{ km}$$

8. Cost of 12 pencils = ₹ 30

$$\text{Cost of 144 pencils} = \frac{30 \times 144}{12}$$

(1 gross = 122 = 144) Rs 360

9. Tution fees paid by 18 boys = ₹ 4410

$$\text{Tution fees paid by 45 boys} = \frac{4410 \times 45}{18} = ₹ 11025$$

10. Load carried 60 quintals by 2 canters

1 tonne = 10 quintal

18 tonnes = 18 × 10 = 180 quintals

$$\text{Canters needed to carry 180 quintals} = \frac{180 \times 2}{60}$$

= 6 canters

## Chapter 8 : Multiples and Factors

### Exercise 8A

- (a) 16, 24, 32, 40, 48                      (b) 26, 39, 52, 65, 78  
(c) 36, 54, 72, 90, 108                    (d) 40, 60, 80, 100, 120
- (a) 24, 30, 36                                    (b) 44, 55, 66  
(c) 60, 75, 90                                    (d) 76, 95, 114

3. (a) 12, 24

4. 56, 63, 70

5. (a) Even

(b) Odd

(c) Even

(d) Odd

(e) Even

(f) Odd

6. (a) 2

(b) 1

(c) 98

(d) 101

(e) 99

**Exercise 8B**

1. (a) factors

(b) 9, 8

(c) 54

(d) 11

2.  $9 \overline{)1089} (121$

$$\begin{array}{r}
 -9 \\
 \hline
 18 \\
 -19 \\
 \hline
 9 \\
 -9 \\
 \hline
 \times
 \end{array}$$

3.  $19 \overline{)1558} (82$

$$\begin{array}{r}
 -152 \\
 \hline
 38 \\
 -38 \\
 \hline
 \times
 \end{array}$$

Yes, 9 is factor

Yes, 19 is the factor

4. (a) Yes

(b) No

(c) Yes

5.  $72 =$

$1 \times 72$

$2 \times 36$

$3 \times 24$

$4 \times 18$

$6 \times 12$

$8 \times 9$

Factors of 72 = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

6. 108

$1 \times 108$

$2 \times 54$

$3 \times 36$

$4 \times 27$

$6 \times 18$

$9 \times 12$

Factors of 108 = 1, 2, 3, 4, 6, 9, 12, 18, 27, 36, 54, 108

7.  $27 =$

$1 \times 27$

$3 \times \textcircled{9} = 1, 3, 9, 27$

8.  $36 =$

$\textcircled{1}, 2, 3, 4, 6, 9, 12$

**Exercise 8C**

1. (a) No

(b) Yes

(c) Yes

(d) No

(e) No

(f) Yes

(g) Yes

(h) No

2. (a) Yes

(b) Yes

(c) No

(d) No

3. (a) Yes

(b) Yes

(c) Yes

(d) No

4. (a)  $5436 = 5 + 4 + 3 + 6 = 18$       Yes

(b)  $5689 = 5 + 6 + 8 + 9 = 28$       No

(c)  $3835 = 3 + 8 + 3 + 5 = 19$       No

(d)  $1010 = 1 + 0 + 1 + 0 + 1 = 3$       Yes

5. (a)  $3454 = 3 + 4 + 5 + 4 = 16$ ,      No

Divisible by 2 but not by 3

(b)  $4323 = \text{No}$ , Not divisible by 2

$4 + 3 + 2 + 3 = 12 = \text{Divisible by 3}$

(c)  $8007 = \text{Not divisible by 2}$

$8 + 0 + 0 + 7 = 15 = \text{Divisible by 3}$

(d)  $5028 = \text{Divisible by 2}$

$5 + 0 + 2 + 8 = 15$ , Divisible by 3

**Exercise 8D**

1. (a) 2, 3, 5, 7, 11, 13, 17, 19, 23, 29

(b) 53, 59, 61, 67

2. (a) 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20

(b) 32, 33, 34, 35, 36, 38, 40, 42, 44, 45, 46, 48, 49

3. (a) True      (b) False      (c) True      (d) False

4. (a) 
$$\begin{array}{r|l} 2 & 48 \\ \hline & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

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

(b) 
$$\begin{array}{r|l} 2 & 50 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$2 \times 5 \times 5$

(c) 
$$\begin{array}{r|l} 2 & 84 \\ \hline 2 & 42 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

$2 \times 2 \times 3 \times 7$

(d) 
$$\begin{array}{r|l} 2 & 120 \\ \hline 2 & 60 \\ \hline 2 & 30 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$2 \times 2 \times 2 \times 3 \times 5$

$$\begin{array}{r|l}
 (e) & 2 \mid 840 \\
 \hline
 & 2 \mid 420 \\
 \hline
 & 2 \mid 210 \\
 \hline
 & 3 \mid 105 \\
 \hline
 & 5 \mid 25 \\
 \hline
 & 7 \mid 7 \\
 \hline
 & 1
 \end{array}
 \quad 2 \times 2 \times 2 \times 3 \times 5 \times 7$$

### Exercise 8E

1. (a) 6 and 15

$$\begin{aligned}
 6 &= 1, 2, \textcircled{3}, 6 \\
 15 &= 1, \textcircled{3}, 5, 15 \\
 \text{HCF} &= 3
 \end{aligned}$$

(b) 13 and 39

$$\begin{aligned}
 13 &= \textcircled{13} \times 1 \\
 39 &= \textcircled{13} \times 3 \\
 \text{HCF} &= 13
 \end{aligned}$$

(c) 21 and 35

$$\begin{aligned}
 21 &= 1, 3, \textcircled{7}, 21 \\
 35 &= 1, 5, \textcircled{7}, 35 \\
 \text{HCF} &= 7
 \end{aligned}$$

(d) 75 and 125

$$\begin{aligned}
 75 &= 1, 3, 5, 15, \textcircled{25} \\
 125 &= 1, 5, \textcircled{25} \\
 \text{HCF} &= 25
 \end{aligned}$$

(e) 46 and 84

$$\begin{aligned}
 46 &= 1, \textcircled{2}, 46 \\
 84 &= 1, \textcircled{2}, 3, 4, 6, 7 \\
 \text{HCF} &= 2
 \end{aligned}$$

(f) 16 and 21

$$\begin{aligned}
 16 &= \textcircled{1}, 2, 4, 8, 16 \\
 21 &= \textcircled{1}, 3, 7, 21
 \end{aligned}$$

$$\begin{array}{r|l}
 2. (a) & 2 \mid 6, 8 \\
 \hline
 & 2 \mid 3, 4 \\
 \hline
 & 2 \mid 3, 2 \\
 \hline
 & 3 \mid 3, 1 \\
 \hline
 & 1, 1
 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 2 \times 3 = 24$$

$$\begin{array}{r|l}
 (b) & 7 \mid 7, 21 \\
 \hline
 & 3 \mid 1, 3 \\
 \hline
 & 1, 1
 \end{array}$$

$$\text{LCM} = 7 \times 3 = 21$$

$$\begin{array}{r|l}
 (c) & 3 \mid 9, 15 \\
 \hline
 & 3 \mid 3, 5 \\
 \hline
 & 5 \mid 1, 5 \\
 \hline
 & 1, 1
 \end{array}$$

$$\text{LCM} = 3 \times 3 \times 5 = 45$$

$$\begin{array}{r|l}
 (d) & 3 \mid 13, 29 \\
 \hline
 & 13 \mid 13, 13 \\
 \hline
 & 1, 1
 \end{array}$$

$$\text{LCM} = 3 \times 13 = 39$$





$$(b) \frac{6 \times 2}{8 \times 2} = \frac{12}{16}; \frac{6 \times 3}{8 \times 3} = \frac{18}{24}$$

$$(c) \frac{7 \times 2}{9 \times 2} = \frac{14}{18}; \frac{7 \times 3}{9 \times 3} = \frac{21}{27}$$

$$(d) \frac{4 \times 2}{6 \times 2} = \frac{8}{12}; \frac{4 \times 3}{6 \times 3} = \frac{12}{18}$$

$$(e) \frac{1 \times 2}{5 \times 2} = \frac{2}{10}; \frac{1 \times 3}{5 \times 3} = \frac{3}{15}$$

$$(f) \frac{9 \times 2}{15 \times 2} = \frac{18}{30}; \frac{9 \times 3}{15 \times 3} = \frac{27}{45}$$

$$(g) \frac{8 \times 2}{25 \times 2} = \frac{16}{50}; \frac{8 \times 3}{25 \times 3} = \frac{24}{75}$$

$$(h) \frac{11 \times 2}{29 \times 2} = \frac{22}{58}; \frac{11 \times 3}{29 \times 3} = \frac{33}{87}$$

$$6. (a) \frac{3}{5} = \frac{\boxed{3}}{\boxed{25}} = 25 \div 5 = 5, 3 \times 5 = 15$$

$$(b) \frac{4}{8} \times \frac{7}{7} = \frac{28}{\boxed{56}}$$

$$(c) \frac{2}{7} \times \frac{3}{3} = \frac{\boxed{6}}{21}$$

$$(d) \frac{5}{10} \times \frac{10}{10} = \frac{50}{\boxed{100}}$$

$$(e) \frac{4}{9} \times \frac{8}{8} = \frac{\boxed{32}}{72}$$

$$(f) \frac{36}{45} \div \frac{9}{9} = \frac{\boxed{4}}{5}$$

$$(g) \frac{45}{70} \div \frac{5}{5} = \frac{9}{14}$$

$$(h) \frac{1}{9} \times \frac{9}{9} = \frac{\boxed{9}}{81}$$

$$7. (a) \frac{4}{8} \times \frac{9}{9} = \frac{36}{72}$$

$$(b) \frac{4}{8} \times \frac{5}{5} = \frac{20}{40}$$

$$(c) \frac{4}{8} \times \frac{6}{6} = \frac{24}{48}$$

$$(d) \frac{4}{8} \times \frac{8}{8} = \frac{32}{64}$$

$$8. (a) \frac{6}{15} \times \frac{12}{30} = \frac{6 \times 30}{15 \times 12} = \frac{180}{180} \quad \text{Yes}$$

$$(b) \frac{18}{72} \times \frac{9}{36} = \frac{18 \times 36}{72 \times 9} = \frac{648}{648} \quad \text{Yes}$$

$$(c) \frac{14}{12} \times \frac{16}{48} = \frac{14 \times 48}{12 \times 16} = \frac{672}{192} \quad \text{No}$$

$$(d) \frac{25}{36} \times \frac{5}{6} = \frac{25 \times 6}{36 \times 5} = \frac{150}{180} \quad \text{No}$$

$$(e) \frac{6}{8} \times \frac{21}{35} = \frac{6 \times 35}{8 \times 21} = \frac{210}{168} \quad \text{No}$$

$$(f) \frac{7}{31} \times \frac{14}{63} = \frac{7 \times 63}{31 \times 14} = \frac{441}{434} \quad \text{No}$$

### Exercise 9C

1. (a) ✓                      (b) ✗                      (c) ✗                      (d) ✓

2. (a) ✓                      (b) ✗                      (c) ✗                      (d) ✓                      (e) ✗

3. (a) ✓                      (b) ✓                      (c) ✓                      (d) ✗                      (e) ✗

4. (a)  $7 \overline{)17} \underline{14} \phantom{0} \phantom{0} \phantom{0}$   
 $\frac{-14}{03} = 2 \frac{3}{7}$

(b)  $2 \overline{)15} \underline{14} \phantom{0} \phantom{0} \phantom{0}$   
 $\frac{-14}{01} = 7 \frac{1}{2}$

(c)  $5 \overline{)23} \underline{20} \phantom{0} \phantom{0} \phantom{0}$   
 $\frac{-20}{03} = 4 \frac{3}{5}$

(d)  $11 \overline{)47} \underline{44} \phantom{0} \phantom{0} \phantom{0}$   
 $\frac{-44}{03} = 4 \frac{3}{11}$

(e)  $12 \overline{)39} \underline{36} \phantom{0} \phantom{0} \phantom{0}$   
 $\frac{-36}{03} = 3 \frac{3}{12}$

5. (a)  $6 \frac{3}{5} = 5 \times 6 + 3 = 33$

(b)  $7 \frac{5}{9} = 9 \times 7 + 5 = 68$

(c)  $3 \frac{1}{10} = 10 \times 3 + 1 = 31$

(d)  $2 \frac{4}{11} = 11 \times 2 + 4 = 26$

(e)  $6 \frac{9}{25} = 25 \times 6 + 9 = 159$

Exercise 9D

1. (a)  $\frac{6}{5}, \frac{8}{3} = \text{LCM} = 15$

$$\frac{6 \times 3}{15} = \frac{18}{15}, \quad \frac{8 \times 5}{15} = \frac{40}{15} = \frac{6}{5} < \frac{8}{3}$$

(b)  $\frac{3}{8} < \frac{9}{8}$

(c)  $\frac{16}{3} > \frac{19}{3}$

(d)  $\frac{13}{21}, \frac{15}{23} = \text{LCM} = 21 \times 23 = 483$

$$\frac{13 \times 23}{483} = \frac{299}{483}, \quad \frac{15 \times 21}{483} = \frac{315}{483} = \frac{13}{21} < \frac{15}{23}$$

(e)  $3\frac{1}{2}, 7\frac{11}{19} = \frac{7}{2}, \frac{144}{19} = \text{LCM} = 2 \times 19 = 38$

$$\frac{7 \times 19}{38} = \frac{133}{38}, \quad \frac{144 \times 2}{38} = \frac{288}{38} = 3\frac{1}{2} < 7\frac{11}{19}$$

(f)  $1\frac{7}{13}, \frac{10}{25} = \frac{20}{13}, \frac{10}{25}$

$$\frac{20 \times 13}{325} = \frac{260}{325}, \quad \frac{10 \times 25}{325} = \frac{250}{325} = \frac{20}{13} > \frac{10}{25}$$

2. (a)  $\frac{2}{9} < \frac{1}{9}$

(b)  $\frac{9}{4} < \frac{9}{7}$

(c)  $\frac{15}{16}, \frac{9}{20} = \text{LCM} = 80$

$$\frac{15 \times 5}{80} = \frac{75}{80}, \quad \frac{9 \times 4}{80} = \frac{36}{80} = \frac{15}{16} < \frac{9}{20}$$

(d)  $\frac{7}{25}, \frac{6}{17} = \text{LCM} = 425$

$$\frac{7 \times 17}{425} = \frac{119}{425}, \quad \frac{6 \times 25}{425} = \frac{150}{425} = \frac{119}{425} < \frac{150}{425}$$

(e)  $\frac{10}{11} < \frac{10}{8}$

(f)  $\frac{11}{15} < \frac{13}{15}$

$$3. (a) \frac{1}{5}, \frac{5}{7}, \frac{3}{8}, \frac{4}{9}, \frac{2}{7} \quad \text{LCM} = 2520$$

$$\frac{2 \times 504}{2520} = \frac{504}{2520}, \frac{5 \times 360}{2520} = \frac{1800}{2520}$$

$$\frac{3 \times 315}{2520} = \frac{945}{2520}, \frac{4 \times 280}{2520} = \frac{1120}{2520}, \frac{2 \times 360}{2520} = \frac{720}{2520}$$

$$\text{Ans. } \frac{1}{5}, \frac{5}{7}, \frac{3}{8}, \frac{4}{9}, \frac{2}{7}$$

$$(b) \frac{1}{18}, \frac{5}{18}, \frac{7}{18}, \frac{11}{18}, \frac{17}{18}$$

$$(c) \frac{13}{3}, \frac{15}{5}, \frac{17}{2}, \frac{11}{2}, \frac{19}{4} \quad \text{LCM} = 420$$

$$\frac{13 \times 140}{420} = \frac{1820}{420}, \frac{15 \times 84}{420} = \frac{1260}{420}$$

$$\frac{17 \times 60}{420} = \frac{1020}{420}, \frac{11 \times 210}{420} = \frac{2310}{420}, \frac{19 \times 105}{420} = \frac{1995}{420}$$

$$\text{Ans. } \frac{17}{7}, \frac{15}{5}, \frac{13}{3}, \frac{19}{4}, \frac{11}{2}$$

$$(d) \frac{2}{7}, \frac{7}{12}, \frac{13}{8}, \frac{15}{19}, \frac{11}{23} \quad \text{LCM} = 110124$$

$$\frac{2 \times 15732}{110124} = \frac{31464}{110124}, \frac{7 \times 9177}{110124} = \frac{64239}{110124}$$

$$\frac{13 \times 6118}{110124} = \frac{79534}{110124}, \frac{15 \times 5796}{110124} = \frac{86940}{110124}$$

$$\frac{11 \times 4788}{110124} = \frac{52668}{110124} = \frac{2}{7}, \frac{11}{23}, \frac{7}{12}, \frac{13}{18}, \frac{15}{19}$$

$$4. (a) \frac{1}{4}, \frac{5}{9}, \frac{2}{3}, \frac{7}{11}, \frac{5}{8} \quad \text{LCM} = 792$$

$$\frac{1 \times 198}{792} = \frac{198}{792}, \frac{5 \times 88}{792} = \frac{440}{792}$$

$$\frac{2 \times 264}{792} = \frac{528}{792}, \frac{7 \times 72}{792} = \frac{504}{792}, \frac{5 \times 99}{792} = \frac{495}{792}$$

$$\frac{2}{3}, \frac{7}{11}, \frac{5}{8}, \frac{5}{9}, \frac{1}{4}$$

$$(b) \frac{19}{40}, \frac{6}{15}, \frac{7}{13}, \frac{5}{9}, \frac{1}{10} \quad \text{LCM} = 4680$$

$$\frac{19 \times 117}{4680} = \frac{2223}{4680}, \frac{6 \times 312}{4680} = \frac{1872}{4680}$$

$$\frac{7 \times 360}{4680} = \frac{2520}{4680}, \frac{5 \times 520}{4680} = \frac{2600}{4680}, \frac{1 \times 468}{4680} = \frac{468}{4680}$$

$$\text{Ans. } \frac{5}{9}, \frac{7}{13}, \frac{19}{40}, \frac{6}{15}, \frac{1}{10}$$

$$(c) \frac{19}{23}, \frac{11}{23}, \frac{7}{23}, \frac{5}{23}, \frac{2}{23} \quad (d) \frac{19}{4}, \frac{19}{6}, \frac{19}{9}, \frac{19}{13}, \frac{19}{17}$$

### Exercise 9E

$$1. (a) \frac{3}{17} + \frac{6}{17} = \frac{3+6}{17} = \frac{9}{17}$$

$$(b) \frac{5}{25} + \frac{3}{25} = \frac{5+3}{25} = \frac{8}{25}$$

$$(c) \frac{3}{34} + \frac{17}{34} = \frac{3+17}{34} = \frac{20}{34}$$

$$(d) \frac{1+4+5}{11} = \frac{10}{11} \quad (e) \frac{2+3+4}{15} = \frac{9}{15}$$

$$(f) \frac{7+3+5}{29} = \frac{15}{29}$$

$$2. (a) \frac{2}{5} + \frac{8}{9} \quad \text{LCM} = 72$$

$$= \frac{2 \times 9}{45} = \frac{18}{45}, \frac{8 \times 5}{45} = \frac{40}{45}, \frac{18+40}{45} = \frac{58}{45}$$

$$(b) \frac{1}{8} + \frac{3}{9} \quad \text{LCM} = 72$$

$$= \frac{1 \times 9}{72} = \frac{9}{72}, \frac{3 \times 8}{72} = \frac{24}{72}, \frac{9}{72} + \frac{24}{72} = \frac{33}{72}$$

$$(c) \frac{8}{13} + \frac{5}{17} \quad \text{LCM} = 221$$

$$= \frac{8 \times 17}{221} = \frac{136}{221}, \frac{5 \times 3}{221} = \frac{65}{221}, \frac{136}{221} + \frac{65}{221} = \frac{201}{221}$$

$$\begin{aligned}
 \text{(d)} \quad & \frac{2}{7}, \frac{1}{14} \text{ and } \frac{4}{35} \quad \text{LCM} = 70 \\
 & = \frac{2 \times 10}{70} = \frac{20}{70}, \frac{1 \times 5}{70} = \frac{5}{70}, \frac{4 \times 2}{70} = \frac{8}{70} \\
 & \frac{20}{70} + \frac{5}{70} + \frac{8}{70} = \frac{33}{70}
 \end{aligned}$$

$$\begin{aligned}
 \text{(e)} \quad & \frac{7}{8}, \frac{9}{16} \text{ and } \frac{4}{40} \quad \text{LCM} = 80 \\
 & = \frac{7 \times 10}{80} = \frac{70}{80}, \frac{9 \times 5}{80} = \frac{45}{80}, \frac{4 \times 2}{80} = \frac{8}{80} \\
 & \frac{70}{80} + \frac{45}{80} + \frac{8}{80} = \frac{123}{80}
 \end{aligned}$$

$$\begin{aligned}
 \text{(f)} \quad & \frac{5}{16} + \frac{7}{32} + \frac{4}{64} \quad \text{LCM} = 64 \\
 & \frac{5 \times 4}{64} + \frac{7 \times 2}{64} + \frac{4 \times 1}{64} = \frac{20}{64} + \frac{14}{64} + \frac{4}{64} = \frac{38}{64}
 \end{aligned}$$

$$\text{3. (a)} \quad 2 \frac{3}{8} + 4 \frac{5}{8} = \frac{19}{8} + \frac{37}{8} = \frac{56}{8}$$

$$\text{(b)} \quad 4 \frac{7}{15} + 3 \frac{9}{15} = \frac{67}{15} + \frac{54}{15} = \frac{121}{15}$$

$$\text{(c)} \quad \frac{5}{21} + 2 \frac{2}{21} = \frac{5}{21} + \frac{44}{21} = \frac{49}{21}$$

$$\begin{aligned}
 \text{(d)} \quad & 1 \frac{3}{4} + 3 \frac{1}{2} + 1 \frac{4}{12} \quad \text{LCM} = 12 \\
 & \frac{7}{4} + \frac{7}{2} = \frac{16}{12} = \frac{7 \times 3 + 7 \times 6 + 16 \times 1}{12} \\
 & \frac{21 + 42 + 16}{12} = \frac{79}{12}
 \end{aligned}$$

$$\begin{aligned}
 \text{(e)} \quad & 4 \frac{3}{8} + 1 \frac{5}{5} + 2 \frac{1}{8} \quad \text{LCM} = 40 \\
 & \frac{35}{8} + \frac{10}{5} = \frac{17}{8} = \frac{35 \times 5 + 10 \times 8 + 17 \times 5}{40} \\
 & 175 + 80 + 85 = \frac{340}{40} = \frac{68}{8}
 \end{aligned}$$

$$4. (a) 2\frac{1}{4} + 3 = \frac{7}{4} + 3 = \frac{7 + 12}{4} = \frac{19}{4}$$

$$(b) 4\frac{1}{6} + \square = 7\frac{1}{6} = \frac{43}{6} - \frac{25}{6} = \frac{18}{6} = 3$$

$$(c) 3\frac{1}{8} + 4\frac{2}{6} = 4\frac{2}{6} + \left[3\frac{1}{8}\right]$$

$$(d) \left[\frac{2}{5} + \frac{3}{10}\right] + \frac{4}{9} = \frac{2}{5} + \left[\frac{3}{10} + \frac{4}{9}\right]$$

### Exercise 9F

$$1. (a) \frac{6-2}{15} = \frac{4}{15} \quad (b) \frac{17-2}{23} = \frac{15}{23} \quad (c) \frac{3-1}{10} = \frac{2}{10}$$

$$2. (a) \frac{2}{3} - \frac{1}{4} = \text{LCM} = 12$$

$$= \frac{2 \times 4 - 1 \times 3}{12} = \frac{8 - 3}{12} = \frac{5}{12}$$

$$(b) \frac{3}{8} - \frac{2}{9} = \text{LCM} = 72$$

$$= \frac{9 \times 3 - 2 \times 8}{72} = \frac{27 - 16}{72} = \frac{11}{72}$$

$$(c) \frac{11}{13} - \frac{2}{5} = \text{LCM} = 65$$

$$= \frac{11 \times 5 - 2 \times 13}{65} = \frac{55 - 26}{65} = \frac{29}{65}$$

$$3. (a) 4\frac{5}{6} - 3\frac{11}{12} = \text{LCM} = 12$$

$$\frac{29}{6} - \frac{47}{12} = \frac{29 \times 2 - 47}{12} = \frac{58 - 47}{12} = \frac{11}{12}$$

$$(b) 9\frac{5}{16} - 4\frac{5}{8} = \text{LCM} = 16$$

$$\frac{149}{16} - \frac{37}{8} = \frac{149 - 37 \times 2}{16} = \frac{149 - 74}{16} = \frac{75}{16}$$



$$(c) 15 - 3\frac{1}{4} = \text{LCM} = 4$$

$$15 - \frac{13}{4} = \frac{15 \times 4 - 13}{4} = \frac{60 - 13}{4} = \frac{47}{4}$$

$$(d) 12 - 6\frac{1}{3} = 12 - \frac{19}{3}$$

$$= \frac{12 \times 3 - 19}{3} = \frac{36 - 19}{3} = \frac{17}{3}$$

$$(e) \frac{25}{8} - 1\frac{3}{4} = \frac{25}{8} - \frac{7}{4}$$

$$= \frac{25 - 14}{8} = \frac{11}{8}$$

$$(f) 6\frac{1}{4} - 2\frac{1}{3} = \text{LCM} = 12$$

$$\frac{25}{4} - \frac{7}{3} = \frac{25 \times 3 - 7 \times 4}{12} = \frac{75 - 28}{12} = \frac{47}{12}$$

$$4. (a) 13\frac{1}{5} - 10 = \text{LCM} = 5$$

$$\frac{66}{5} - 10 = \frac{66 - 10 \times 5}{5} = \frac{66 - 50}{5} = \frac{16}{5}$$

$$(b) 5\frac{3}{4} - 3\frac{3}{4} = \frac{23}{4} - \frac{15}{4} = \frac{8}{4}$$

$$(c) \square - 10 = 3\frac{5}{8}$$

$$10 - \frac{29}{8} = \frac{80 - 29}{8} = \frac{51}{8}$$

$$(d) 6\frac{1}{5} - 3\frac{1}{5} = \frac{31}{5} - \frac{16}{5} = \frac{15}{5} = 3$$

### Exercise 9G

1. Deepa studies for  $3\frac{1}{5}$  hrs =  $\frac{16}{5}$  hrs

Deepa plays for  $2\frac{1}{3}$  hrs =  $\frac{7}{3}$  hrs

$$\frac{16 \times 3 - 7 \times 5}{15} = \frac{48 + 35}{15} = \frac{83}{15} \text{ hrs}$$

2. Milk drank by Abhinav  $\frac{1}{2}$  l

Milk drank  $1\frac{1}{2}$  l =  $\frac{3}{2}$  l

Udit drank more by  $\frac{3}{2} - \frac{1}{2} = \frac{2}{2} = 1$  l

3. Cold drink bought on Thursday  $\frac{1}{2}$  l

Cold drink bought on Friday  $2\frac{3}{5}$  l =  $\frac{13}{5}$  l

Cold drink bought Saturday  $2\frac{1}{3}$  l =  $\frac{7}{3}$  l

Total cold drink bought =  $\frac{1}{2} + \frac{13}{5} + \frac{7}{3}$

$$\text{LCM} = 30 = \frac{1 \times 15 + 13 \times 6 + 7 \times 10}{30}$$

$$= \frac{15 + 78 + 70}{30} = \frac{163}{30} \text{ l}$$

4. Petrol used in bike and scooter

$4\frac{1}{3}$  l +  $2\frac{1}{4}$  l ; LCM = 12

$$\frac{13}{3} + \frac{9}{4} = \frac{13 \times 4 + 9 \times 3}{12} = \frac{52 + 27}{12} = \frac{79}{12}$$

$$\text{Petrol left} = 10 - \frac{79}{12} = \frac{10 \times 12 - 79}{12} = \frac{120 - 79}{12} = \frac{41}{12} \text{ l}$$

5. Qty of oil in tin  $12\frac{1}{5} l = \frac{61}{5} l$

Oil leared from the tin  $7\frac{2}{4} l = \frac{30}{4} l$

$$\frac{61}{5} - \frac{30}{4} = \frac{61 \times 4 - 30 \times 5}{20} = \frac{244 - 150}{20} = \frac{94}{20}$$

6. Length of three pieces of ribbon

$$15\frac{1}{7} \text{ cm} + 10\frac{3}{6} \text{ cm} + 12\frac{3}{8} \text{ cm}$$

$$\frac{106}{7} + \frac{63}{6} + \frac{99}{8}; \quad \text{LCM} = 168$$

$$= \frac{106 \times 24 + 63 \times 56 + 99 \times 21}{168}$$

$$= \frac{2544 + 3528 + 2079}{168} = \frac{8151}{168}$$

#### Exercise 9H

1. (a)  $\frac{3}{4} \times 24 = 3 \times 6 = 18$  (b)  $\frac{5}{8} \times 32 = 5 \times 4 = 20$

(b)  $\frac{1}{5} \times 7 = \frac{7}{5}$  (c)  $\frac{3}{10} \times 15 = \frac{3}{2} \times 3 = \frac{9}{2}$

(e)  $2\frac{5}{6} \times 14 = \frac{17}{6} \times 14 = \frac{17}{3} \times 7 = \frac{119}{3}$

(f)  $2\frac{5}{9} \times 3 = \frac{23}{9} \times 3 = \frac{23}{3}$

2. (a)  $\frac{4}{7} \times \frac{5}{11} = \frac{20}{77}$  (b)  $\frac{10}{16} \times \frac{2}{7} = \frac{10}{8 \times 7} = \frac{10}{56}$

(c)  $\frac{5}{13} \times \frac{2}{17} = \frac{10}{221}$  (d)  $\frac{13}{5} \times 2\frac{3}{7} = \frac{13}{5} \times \frac{17}{7} = \frac{221}{35}$

(e)  $3\frac{7}{13} \times 2\frac{1}{5} = \frac{46}{13} \times \frac{11}{5} = \frac{506}{65}$

(f)  $5\frac{1}{7} \times 2\frac{3}{19} = \frac{36}{7} \times \frac{41}{19} = \frac{1476}{133}$

3. (a)  $5 \times \frac{1}{35} = \frac{1}{7}$       (b)  $\frac{4}{9} \times 45 = 4 \times 5 = 20$   
 (c)  $\frac{3}{7} \times 63 = 3 \times 9 = 27$     (d)  $\frac{3}{8} \times \frac{5}{18} = \frac{5}{8 \times 6} = \frac{5}{48}$
4. (a)  $\frac{1}{5} \times 100 = 20$  ps.      (b)  $\frac{3}{6} \times 24 = 4$  hours  
 (c)  $\frac{3}{7} \times 7 = 3$  days      (d)  $\frac{1}{4} \times 1000 = 250$  m

### Exercise 9I

1. Do yourself

2. Do yourself

### Exercise 9J

1. (a)  $\frac{3}{7} \div 2 = \frac{3}{7} \times \frac{1}{2} = \frac{3}{14}$   
 (b)  $\frac{4}{5} \div 3 = \frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$   
 (c)  $\frac{8}{9} \div 15 = \frac{8}{9} \times \frac{1}{15} = \frac{8}{135}$   
 (d)  $\frac{6}{7} \div \frac{4}{5} = \frac{6}{7} \times \frac{5}{4} = \frac{30}{28}$   
 (e)  $74 \div \frac{2}{9} = 74 \times \frac{9}{2} = 37 \times 9 = 333$   
 (f)  $36 \div \frac{6}{5} = 36 \times \frac{5}{6} = 6 \times 5 = 30$
2. (a)  $10 \frac{2}{7} \div 21 = \frac{72}{7} \times \frac{1}{21} = \frac{72}{147} = \frac{24}{49}$   
 (b)  $6 \frac{5}{5} \div 58 = \frac{35}{5} \times \frac{1}{58} = \frac{7}{58}$   
 (c)  $30 \frac{2}{7} \div 35 = \frac{212}{7} \times \frac{1}{35} = \frac{212}{245}$   
 (d)  $5 \frac{4}{5} \div \frac{11}{15} = \frac{29}{5} \times \frac{15}{11} = \frac{29 \times 3}{11} = \frac{87}{11}$   
 (e)  $13 \frac{3}{5} \div \frac{1}{2} = \frac{68}{5} \times \frac{2}{1} = \frac{136}{5}$

$$(f) 7 \frac{10}{10} \div 55 = \frac{500}{70} \times \frac{1}{55} = \frac{100}{70 \times 11} = \frac{100}{770}$$

**Exercise 9K**

1. Price of one ticket =  $3 \frac{4}{7} = \frac{25}{7}$

Total tickets sold for = ₹ 500

$$= 500 \div \frac{25}{7} = 500 \div \frac{7}{25} = 20 \times 7$$

Total tickets sold = 140 tickets

2. Length of cloth = 45 m

$$\text{Length of cloth sold} = \frac{3}{7} \text{ m}$$

$$\text{Cloth left} = 45 \times \frac{3}{7} = \frac{135}{7} = 16 \frac{3}{7} \text{ m}$$

3. Product of two numbers =  $7 \frac{3}{7} = \frac{52}{7}$

$$\text{One number} 2 \frac{3}{7} = \frac{17}{7}$$

$$\text{Other number} \frac{52}{7} \div \frac{17}{7} = \frac{52}{7} \times \frac{7}{17} = \frac{52}{17} = 3 \frac{1}{17}$$

4. Pencil bought for = ₹ 24

$$\text{Cost of one pencil} = ₹ 1 \frac{1}{2} = ₹ \frac{3}{2}$$

$$\text{No. of pencils bought} = 24 \div \frac{3}{2}$$

$$24 \div \frac{2}{3} = 8 \times 2 = 16 \text{ pencils}$$

5. Length of cloth = 300 m

$$\text{Cloth sold} = \frac{3}{10} \text{ m}$$

$$\text{Cloth left} = 300 \times \frac{3}{10} = 30 \times 3 = 90 \text{ m}$$

6.  $4 \frac{2}{5} \div 2 \frac{1}{3} = \frac{22}{5} \div \frac{7}{3} = \frac{22}{5} \times \frac{3}{7} = \frac{66}{35} = 1 \frac{31}{35}$

## Chapter 10 : Decimals

### Exercise 10A

1. (a)  $0.7 = \frac{7}{10}$       (b)  $0.02 = \frac{2}{100}$       (c)  $0.19 = \frac{19}{100}$   
(d)  $0.085 = \frac{85}{1000}$       (e)  $0.515 = \frac{515}{1000}$       (f)  $0.009 = \frac{9}{1000}$   
(h)  $0.045 = \frac{45}{1000}$
2. (a) 0.6      (b) 0.04      (c) 0.87      (d) 0.060  
(e) 0.474      (f) 0.300      (g) 0.015      (h) 0.009
3. (a) Zero point seven      (b) zero point zero nine  
(c) Five point three four  
(d) Forty two point three five seven  
(e) Seven hundred fifty nine point zero four  
(f) Seventy point zero zero five  
(g) Six hundred twelve point eight  
(h) Eight point nine five four
4. (a)  $20 + 3 + \frac{7}{10} + \frac{5}{100}$       (b)  $70 + 6 + \frac{9}{100}$   
(c)  $10 + 4 + \frac{2}{10} + \frac{7}{100} + \frac{8}{1000}$       (d)  $700 + 90 + 4 + \frac{8}{1000}$
5. (a) 5      (b)  $\frac{5}{10}$       (c)  $\frac{5}{100}$       (d)  $\frac{5}{1000}$
6. (a) 7.237      (b) 56.325

### Exercise 10B

1. (a) >      (b) <      (c) <      (d) >      (e) >  
(f) >      (g) >      (h) >      (i) >      (j) <
2. (a) 0.026, 0.36, 0.569, 0.77, 0.98  
(b) 0.098, 0.198, 0.809, 0.89, 0.981  
(c) 0.039, 0.0631, 0.092, 0.351, 0.891  
(d) 0.05, 0.321, 0.63, 0.83, 0.93
3. (a) 0.92, 0.7, 0.65, 0.12, 0.05  
(b) 0.85, 0.65, 0.35, 0.15, 0.015

- (c) 0.85, 0.65, 0.45, 0.25, 0.02  
 (d) 0.999, 0.811, 0.111, 0.011, 0.001

### Chapter 11 : Metric Measures

#### Exercise 11A

1. (a) 100      (b) 1000      (c) 10      (d) 1000  
 (e) 1000      (f) 1000      (g) 100      (h) 10      (i) 100
2. (a)  $4 \text{ m } 5 \text{ cm} = 1 \text{ m} = 100 \text{ cm} = 4 \times 100 + 5 = 405 \text{ cm}$   
 (b)  $6 \text{ cm } 6 \text{ mm to mm} = 1 \text{ cm} = 10 \text{ mm}$   
 $6 \times 10 + 6 = 66 \text{ mm}$   
 (c)  $5 \text{ km } 325 \text{ m to m} = 1 \text{ km} = 1000 \text{ m}$   
 $5 \times 1000 + 325 = 5325 \text{ m}$   
 (d)  $8 \text{ l } 30 \text{ ml} = 1 \text{ l} = 1000 \text{ ml}$   
 $8 \times 1000 + 30 = 8030 \text{ ml}$   
 (e)  $18 \text{ cm } 14 \text{ mm to m} = 1 \text{ cm} = 10 \text{ mm}$   
 $18 \times 10 + 14 = 180 + 14 = 194 \text{ mm}$   
 (f)  $12 \text{ kg } 15 \text{ g to g} = 1 \text{ kg} = 1000 \text{ g}$   
 $12 \times 1000 + 15 = 12015 \text{ g}$   
 (g)  $80 \text{ m } 18 \text{ cm to m} = 1 \text{ m} = 100 \text{ cm}$   
 $80 \times 100 + 18 = 8018 \text{ cm}$   
 (h)  $333 \text{ kg } 42 \text{ g to g} = 1 \text{ kg} = 1000 \text{ g}$   
 $333 \times 1000 + 42 = 333000 + 42 = 333042 \text{ g}$   
 (i)  $634 \text{ l } 4 \text{ ml to ml} = 1 \text{ l} = 1000 \text{ ml}$   
 $634 \times 1000 + 4 = 634000 + 4 = 634004 \text{ ml}$
3. (a) 6      (b) 8      (c) 5  
 (d) 3      (e) 4      (f) 2
4. Do yourself

#### Exercise 11B

1. (a) 
$$\begin{array}{r} \text{km} \quad \text{m} \\ 52 \quad 516 \\ + 67 \quad 835 \\ \hline 120 \quad 351 \end{array}$$
- (b) 
$$\begin{array}{r} \text{km} \quad \text{m} \\ 384 \quad 375 \\ + 289 \quad 375 \\ \hline 673 \quad 750 \end{array}$$
- (c) 
$$\begin{array}{r} \text{km} \quad \text{m} \\ 45 \quad 375 \\ + 30 \quad 285 \\ \hline 75 \quad 660 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad \text{km} \quad \text{m} \\ 149 \quad 387 \\ + 244 \quad 276 \\ \hline 393 \quad 663 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad \text{l} \quad \text{m/l} \\ 390 \quad 239 \\ + 195 \quad 325 \\ \hline 585 \quad 564 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad \text{l} \quad \text{m/l} \\ 149 \quad 367 \\ + 243 \quad 255 \\ \hline 392 \quad 622 \end{array}$$

$$\begin{array}{r} \text{2. (a)} \quad \text{km} \quad \text{m} \\ 816 \quad 230 \\ - 765 \quad 385 \\ \hline 50 \quad 845 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \text{kg} \quad \text{g} \\ 615 \quad 305 \\ - 378 \quad 816 \\ \hline 236 \quad 489 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \text{l} \quad \text{m/l} \\ 151 \quad 230 \\ - 75 \quad 385 \\ \hline 75 \quad 845 \end{array}$$

**Exercise 11C**

$$\begin{array}{r} \text{1. (a)} \quad \text{m} \quad \text{cm} \\ 45 \quad 63 \\ \times \quad 2 \\ \hline 91 \quad 26 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \text{m} \quad \text{cm} \\ 36 \quad 91 \\ \times \quad 7 \\ \hline 258 \quad 37 \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \text{m} \quad \text{cm} \\ 26 \quad 45 \\ \times \quad 6 \\ \hline 158 \quad 70 \end{array}$$

$$\begin{array}{r} \text{(d)} \quad \text{km} \quad \text{m} \\ 22 \quad 275 \\ \times \quad 4 \\ \hline 89 \quad 100 \end{array}$$

$$\begin{array}{r} \text{(e)} \quad \text{km} \quad \text{m} \\ 96 \quad 185 \\ \times \quad 8 \\ \hline 769 \quad 480 \end{array}$$

$$\begin{array}{r} \text{(f)} \quad \text{m} \quad \text{cm} \\ 135 \quad 126 \\ \times \quad 7 \\ \hline 945 \quad 882 \end{array}$$

$$\begin{array}{r} \text{(g)} \quad \text{l} \quad \text{m/l} \\ 38 \quad 250 \\ \times \quad 3 \\ \hline 114 \quad 750 \end{array}$$

$$\begin{array}{r} \text{(h)} \quad \text{kg} \quad \text{g} \\ 21 \quad 450 \\ \times \quad 12 \\ \hline 257 \quad 400 \end{array}$$

$$\begin{array}{r} \text{(i)} \quad \text{kg} \quad \text{g} \\ 85 \quad 854 \\ \times \quad 18 \\ \hline 1545 \quad 372 \end{array}$$

$$\begin{array}{l} \text{2. (a)} \quad 28 \text{ m } 64 \text{ cm} \div 4 \\ = 28.64 \div 4 \end{array}$$

$$\begin{array}{r} 4 \overline{)28.64} (7.16 \\ \underline{-28} \phantom{00} \\ 06 \phantom{00} \\ \underline{-04} \phantom{00} \\ 24 \phantom{00} \\ \underline{-24} \phantom{00} \\ \times \phantom{00} \end{array}$$

$$= 7 \text{ m } 16 \text{ cm}$$

$$\begin{array}{l} \text{(b)} \quad 81 \text{ kg } 189 \text{ g} \div 9 \\ = 81.189 \div 9 \end{array}$$

$$\begin{array}{r} 9 \overline{)81.189} (9.021 \\ \underline{-81} \phantom{00} \\ 18 \phantom{00} \\ \underline{-18} \phantom{00} \\ 09 \phantom{00} \\ \underline{-09} \phantom{00} \\ \times \phantom{00} \end{array}$$

$$= 9.021 = 9 \text{ kg } 21 \text{ g}$$



$$(c) 12\ 1\ 612\ \text{ml} \div 6$$

$$= 12.612 \div 6$$

$$\begin{array}{r} 6 \overline{)12.612} (2.102 \\ \underline{-12} \\ 06 \\ \underline{-06} \\ 12 \\ \underline{-12} \\ \times \end{array}$$

$$= 2.102 = 2\ 1\ 102\ \text{ml}$$

$$(e) 3950\ \text{kg}\ 592\ \text{g} \div 32$$

$$\begin{array}{r} 32 \overline{)3950.592} (123.456 \\ \underline{-32} \\ 75 \\ \underline{-64} \\ 110 \\ \underline{-096} \\ 145 \\ \underline{-128} \\ 179 \\ \underline{160} \\ 192 \\ \underline{192} \\ \times \end{array}$$

$$= 123\ \text{kg}\ 456\ \text{g}$$

$$(d) 281\ \text{km}\ 862\ \text{m} \div 14$$

$$\begin{array}{r} 14 \overline{)281.862} (20.133 \\ \underline{-28} \\ 18 \\ \underline{-14} \\ 46 \\ \underline{-42} \\ 42 \\ \underline{-42} \\ \times \end{array}$$

$$20\ \text{km}\ 133\ \text{m}$$

$$(f) 192\ 1\ 800\ \text{ml} \div 8$$

$$\begin{array}{r} 8 \overline{)192.800} (24.1 \\ \underline{-160} \\ 32 \\ \underline{-32} \\ 08 \\ \underline{-08} \\ \times \end{array}$$

$$24\ \text{l}\ 1\ \text{ml}$$

### Exercise 11D

1. Qty of milk in container	50 l
Milk sold	– 32 l 500 ml
Milk left in the container	17 l 500 ml
2. Weight of two heaps	50 kg 250 g
Weight of one heap	– 32 kg 525 g
Weight of other heap	17 kg 725 g
3. Weight of sugar	100 kg 250 g
Weight of Rice	+ 40 kg 800 g
Total weight	141 kg 050 g
4. Distance covered on foot	2 km 375 m
Distance covered by bus	7 km 725 m
Distance covered by train	+ 15 km 125 m
Total distance covered	25 km 225 m
5. Oil taken from container	2 l 100 ml
Oil spilled from container	+ 1 l 200 ml
	3 l 300 ml
Total oil in container	5 l 250 ml
Oil taken & spilled	– 3 l 300 ml
	1 l 950 ml
6. Mangoes discarded	5 kg 300 g
Mangoes sold	+ 289 kg 400 g
	294 kg 700 g
Mangoes purchased	320 kg 400 g
Mangoes rotten & sold	– 294 kg 700 g
Mangoes left	25 kg 700 g

## Chapter 12 : Measurement of Time

### Exercise 2A

1. (a) 8:30      (b) 2:20      (c) 11:50      (d) 5:35
2. Do yourself
3. (a) 3:25      (b) 12:55      (c) 10:50      (d) 6:45  
 (e) 4:30      (f) 4:50
4. Do yourself

### Exercise 12B

1. (a) 6 hr = 1 hr = 60 min  
 $6 \times 60 = 360$  min
- (b) 4 hr 27 min =  $4 \times 60 + 27 = 267$  min
- (c) 15 hrs 59 min =  $15 \times 60 + 59 = 959$  min
- (d) 22 hrs 20 min =  $22 \times 60 + 20 = 1340$  min
2. (a) 5 hr 35 min = 1 min = 60 sec  
 $5 \times 60 = 300$  min       $(300 + 35) \times 60$   
 $= 335 \times 60 = 20100$  sec
- (b) 12 hrs =  $12 \times 60 = 720$  min  
 $720 \times 60 = 43200$  sec
- (c) 2 hrs 10 min 35 sec  
 $2 \times 60 = 120$  min       $(120 + 10) \times 60 + 35$   
 $7800 + 35 = 7835$  sec
- (d) 10 hrs 35 min 16 sec  
 $10 \times 60 = 600$  min + 35 min  
 $(635 \times 60) + 16 = 38116$  sec
3. (a)  $936 \text{ min} = 1 \text{ min} = \frac{1}{60} \text{ hrs}$        $60 \overline{)936} \langle 15$
- $\frac{936}{60} = 15 \text{ hrs } 36 \text{ min}$

$$\begin{array}{r} -60 \\ \hline 336 \\ -60 \\ \hline 300 \\ -30 \\ \hline 36 \end{array}$$
- (b)  $\frac{1045}{60} = 17 \text{ hrs } 25 \text{ min}$        $60 \overline{)1045} \langle 17$
- $$\begin{array}{r} -60 \\ \hline 445 \\ -60 \\ \hline 420 \\ -60 \\ \hline 25 \end{array}$$

$$\begin{array}{r} -60 \\ \hline 300 \\ -60 \\ \hline 36 \end{array}$$

(c) 1344 min

$$\begin{array}{r}
 60 \overline{)1344} \langle 22 \\
 \underline{-120} \\
 144 \\
 \underline{-120} \\
 \underline{24}
 \end{array}$$

= 22 hrs 24 min

4. (a) 2766 sec

$$\begin{array}{r}
 60 \overline{)2766} \langle 46 \\
 \underline{-240} \\
 366 \\
 \underline{360} \\
 \underline{06}
 \end{array}$$

= 46 min 6 seconds

(c) 7644 sec

$$\begin{array}{r}
 60 \overline{)7644} \langle 126 \\
 \underline{-60} \\
 164 \\
 \underline{-120} \\
 444 \\
 \underline{-420} \\
 \underline{24}
 \end{array}$$

= 126 min 24 sec

$$\frac{126}{60} = 2 \text{ hrs } 6 \text{ min}$$

(d) 1500 min

$$\begin{array}{r}
 60 \overline{)1500} \langle 25 \\
 \underline{-120} \\
 300 \\
 \underline{-300} \\
 \underline{\times}
 \end{array}$$

= 25 hours

(b) 143 min 10 sec.

$$\begin{array}{r}
 60 \overline{)8590} \langle 143 \\
 \underline{-60} \\
 259 \\
 \underline{240} \\
 190 \\
 \underline{180} \\
 \underline{10}
 \end{array}$$

$$\frac{143}{60} = 2 \text{ hrs } 23 \text{ min}$$

2 hrs 23 min 10 sec

(d) 9585 sec

$$\begin{array}{r}
 60 \overline{)9585} \langle 159 \\
 \underline{-60} \\
 358 \\
 \underline{-300} \\
 585 \\
 \underline{-540} \\
 \underline{45}
 \end{array}$$

159 min 45 sec  
2 hrs 39 min 45 sec

### Exercise 12C

1. (a) 6 a.m.    (b) 4 p.m.    (c) 7 p.m.    (d) 12:15 a.m.

2. (a) 8:20 a.m.    = 08\_20 hours

(b) 12 :45 p.m.    12 \_ 45 hours

(c) 3:15 p.m.    
$$\begin{array}{r} 3 : 15 \\ + 12 : 00 \\ \hline 15 : 15 \end{array}$$
 hours

(d) 12:07 p.m. = 
$$\begin{array}{r} 12 : 07 \\ + 12 : 00 \\ \hline 24 : 07 \end{array}$$
 = 00.07 hours

(e) half past 6 in the evening    
$$\begin{array}{r} 6 : 30 \\ + 12 : 00 \\ \hline 18 : 00 \end{array}$$
 = 18:00 hrs

(f) 
$$\begin{array}{r} 10 : 00 \text{ pm} \\ + 12 : 00 \text{ pm} \\ \hline 22 : 00 \text{ pm} \end{array}$$
    2200 hours

3. (a) 03:00 hours = 03:00 a.m.

(b) 10:00 hours = 10:00 a.m.

(c) 12:30 hours = 12:30 p.m.

(d) 15:05 hours = 
$$\begin{array}{r} 15 : 05 \text{ pm} \\ - 12 : 00 \text{ pm} \\ \hline 3 : 05 \text{ pm} \end{array}$$

### Exercise 12D

1. (a)  $75 - 60 = 15$  sec    
$$\begin{array}{r} \text{min} \quad \text{sec} \\ 15 + 1 (60 \text{ sec}) = 16 \\ \text{Ans. } 16 \text{ min } 15 \text{ sec} \end{array}$$

(b)  $85 - 60 = 25$  sec    
$$\begin{array}{r} 2 \quad 35 \\ + 3 \quad 50 \\ \hline 5 \quad 85 \end{array}$$

$5 + 60 \text{ sec} = 6$  min

Ans. 6 min 25 sec

(c) $87 - 60 = 27 \text{ sec}$	min sec
	2 38
$5 + 1 (60 \text{ sec}) = 6 \text{ min}$	+ 3 49
$= 6 \text{ min } 27 \text{ sec}$	<u>5 87</u>

(d) $66 - 60 = 6 \text{ sec}$	Hr min sec
	10 20 30
$38 \text{ min} + 60 \text{ sec} = 39 \text{ min}$	+ 9 18 36
$19 \text{ hr } 39 \text{ min } 6 \text{ sec}$	<u>19 38 66</u>

(e) $75 - 60 = 15 \text{ sec}$	Hr min sec
	12 40 45
$55 + 1 (60 \text{ sec}) = 56 \text{ min}$	+ 5 15 30
Ans. 17 hrs 56 min 15 sec	<u>17 55 75</u>

	Hr min sec
	15 16 17
(f) Ans. 35 hrs 46 min 57 sec	+ 20 30 40
	<u>35 46 57</u>

2. (a) min sec	(b) min sec	(c) Hr min sec
35 40	25 35	37 45 30
- 10 29	- 17 15	- 18 25 15
<u>25 11</u>	<u>8 20</u>	<u>19 20 15</u>

Ans. 25 min 11 sec	Ans. 8 min 20 sec	Ans. 19 hrs 20 min 15 sec
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3. (a) min sec	
35 40	
- 10 29	
<u>25 11</u>	

(b) 11 15 20	sec = $20 + 60 = 80 - 30$
- 4 20 30	min = $14 + 60 = 74 = 74 - 20 = 54$
<u>6 54 50</u>	hr = $11 - 1 = 10 - 4 = 6$

(c) 25 25 25	sec = $25 + 60 = 85 - 35 = 50$
- 15 35 35	min = $55 - 1 = 24 + 60 = 84$
<u>9 49 50</u>	$84 - 35 = 49$
	hr = $25 - 1 = 24 - 15 = 9 \text{ hr}$

4. Travelled by bus

Travelled by train	5 hr 20 min
$75 - 60 = 15 \text{ min}, 9 \text{ hr} + 1$	$+ 4 \text{ hr } 55 \text{ min}$
$= 10 \text{ hours } 15 \text{ min}$	<u><u>9 hr 75 min</u></u>

5. 11 : 15 a.m. - starting time

1 : 15 p.m. - end time

Program was 2 hrs long.

6. Nikita reaches school at 7 : 45 am

Time took to reach school 50 min

7 : 45	$45 + 60 = 105 - 50 = 55 \text{ min}$
<u>- 50</u>	$7 - 1 = 6 \text{ hr} = 6 : 55$
<u>      </u>	

**Chapter 13 Money**

**Exercise 13A**

1. (a) Rupees two thousand six and seventy eight paise

(b) Rupees three forty five paise

(c) Nine paise

(d) Rupees one hundred forty five thirty seven paise

2. (a) ₹ 202.08

(b) ₹ 11.05

(c) 0.06 p

(d) ₹ 8.08

3. (a) 200 rs. 20 ps.

$$= 200 \times 100 + 20 = 20,000 + 20 = 20020 \text{ ps}$$

(b) 102 rs. 05 ps

$$102 \times 100 + 5 = 10200 + 5 = 10205 \text{ ps}$$

(c) 540 rs. 55 ps

$$(540 \times 100) + 55$$

$$54000 + 55 = 54055 \text{ ps}$$

(d) 1 rs. 18 ps

$$(1 \times 100) + 18 = 118 \text{ ps}$$

(e) 9 rupees 99 paise

$$(9 \times 100) + 99 = 900 + 99 = 999 \text{ ps}$$

(f) 714 rs. & 71 ps

$$(714 \times 100) + 71 = 71400 + 71 = 71471 \text{ ps}$$

4. (a) ₹ 25.40 = 25 × 100 + 40 = 2540 ps

$$(b) \text{ ₹ } 123.29 = 123 \times 100 + 29 \\ = 12300 + 29 = 12329 \text{ ps}$$

(c) ₹ 673.55 = 673 × 100 + 55 = 67355 ps

(d) ₹ 1.50 = 1 × 100 + 50 = 150 ps

(e) ₹ 79.05 = 79 × 100 + 15 = 7915 ps

(f) ₹ 331.14 = 331 × 100 + 14 = 33114 ps

5. (a)  $6435 \text{ p} = \frac{6435}{100} = \text{₹ } 64.35$

(b)  $14 \text{ p} = \frac{14}{100} = \text{₹ } 0.14$

(c)  $13427 \text{ p} = \frac{13427}{100} = \text{₹ } 134.27$

(d)  $25614 \text{ p} = \frac{25614}{100} = \text{₹ } 256.14$

(e)  $305 \text{ p} = \frac{305}{100} = \text{₹ } 3.05$       (f)  $93 \text{ p} = \frac{93}{100} = \text{₹ } 0.93$

### Exercise 13B

1. (a)  $\begin{array}{r} \text{₹ } 420.90 \\ + \text{₹ } 344.15 \\ \hline \text{₹ } 765.05 \end{array}$       (b)  $\begin{array}{r} \text{₹ } 425.37 \\ + \text{₹ } 672.48 \\ \hline \text{₹ } 1097.85 \end{array}$       (c)  $\begin{array}{r} \text{₹ } 7294.09 \\ + \text{₹ } 368.94 \\ \hline \text{₹ } 7663.03 \end{array}$

(d)  $\begin{array}{r} \text{₹ } 1567.90 \\ \text{₹ } 355.09 \\ + \text{₹ } 67.25 \\ \hline \text{₹ } 1990.24 \end{array}$       (e)  $\begin{array}{r} \text{₹ } 3547.42 \\ \text{₹ } 3674.49 \\ + \text{₹ } 24.55 \\ \hline \text{₹ } 7246.46 \end{array}$       (f)  $\begin{array}{r} \text{₹ } 423.72 \\ \text{₹ } 1062.48 \\ + \text{₹ } 10.19 \\ \hline \text{₹ } 1496.39 \end{array}$

2. (a)  $\begin{array}{r} \text{₹ } 480.68 \\ - \text{₹ } 39.59 \\ \hline \text{₹ } 441.09 \end{array}$       (b)  $\begin{array}{r} \text{₹ } 745.60 \\ - \text{₹ } 198.78 \\ \hline \text{₹ } 546.82 \end{array}$       (c)  $\begin{array}{r} \text{₹ } 500.00 \\ - \text{₹ } 347.78 \\ \hline \text{₹ } 152.22 \end{array}$

(d)  $\begin{array}{r} \text{₹ } 2000.50 \\ - \text{₹ } 24.78 \\ \hline \text{₹ } 1975.72 \end{array}$       (e)  $\begin{array}{r} \text{₹ } 403.84 \\ - \text{₹ } 19.99 \\ \hline \text{₹ } 383.85 \end{array}$       (f)  $\begin{array}{r} \text{₹ } 3540.70 \\ - \text{₹ } 2548.34 \\ \hline \text{₹ } 992.36 \end{array}$



## Chapter 14 Geometry

### Exercise 14A

- (a) 3 (b) 5 (c) 5 (d) 4
- (a) Line, PQ (b) Ray XY  
(c) Line segment CD
- (a)  $\angle ABC$  (b)  $\angle OPQ$ ,  $\angle QPR$  (c)  $\angle LMN$
- (a) RQ, QP (b) Q (c)  $\angle PQR$

### Exercise 14B

- (a) one, two (b)  $90^\circ$  (c) right angle  
(d)  $180^\circ$  (e)  $360^\circ$
- A acute right obtuse acute acute
- Do yourself
- Do yourself
- Do yourself
- Do yourself

### Exercise 14C

- (a) same (b) isosceles triangle  
(c) equilateral triangle (d) 3, 3  
(e) unequal (f) acute
- Do yourself
- (a) Right angled (b) Right angled  
(c) Obtuse angle

### Exercise 14D

- (a) four (b) four (c) right  
(d) equal (e) rectangle
- (a) True (b) True (c) False (d) True (e) False
- (a) Rectangles (b) squares (c) Rectangles  
(d) Squares (e) Rectangles (f) Rectangles

## Chapter 15 Perimeter

### Exercise 15

Do yourself

