Chapter 2 : Whole Numbers

ANSWER KEYS

EXERCISE 2.1

1. To represent whole numbers on the number line.

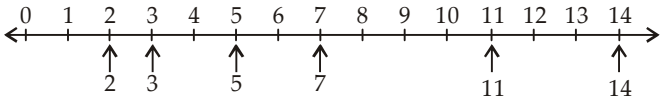
(*i*) Draw a line and mark any point O on it.

(*ii*) Starting from point O, mark point A, B, C, D ..... on the line at equal distance.

Let OA = 1 unit, AB = 1 unit, BC = 1 Unit and so on.

Thus, OA = 1 unit, OB = 2 units, OC = 3 units etc.

Counting in the same manner we can represent whole numbers by points on the line drawn.



2. (*i*) Successor of 100909 = 100909 + 1
= 100910

(*ii*) Successor of 34900 = 34900 + 1
= 34901

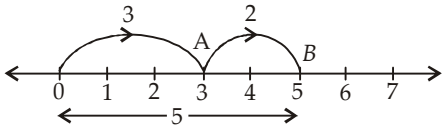
(*iii*) Successor of 492199 = 492199 + 1
= 492200

3. (*i*) Predecessor of 1000 = 1000 – 1
= 999

(*ii*) Predecessor of 70700 = 70700 – 1
= 70699

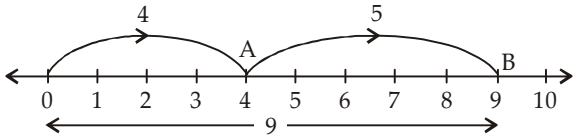
(*iii*) Predecessor of 905000 = 905000 – 1
= 904999

4. (*i*) We draw a number line and move 3 steps from 0 to the right and mark this point as A. Now starting from A move 2 steps towards right and arrive at B.



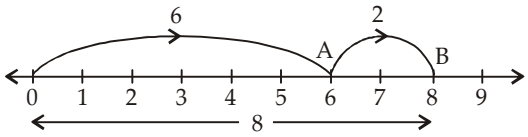
3 + 2 = 5

(*ii*) We draw a number line and move 4 steps from 0 to the right and mark this point as A. Now, starting from A move 5 steps towards right and mark as B.



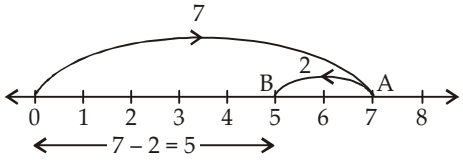
4 + 5 = 9

(*iii*) Draw a number line and move 6 steps towards right from 0 and again move 2 steps from 6.

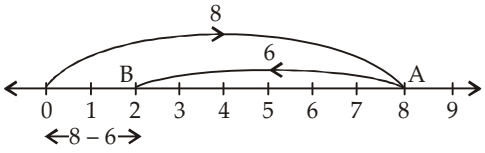


6 + 2 = 8

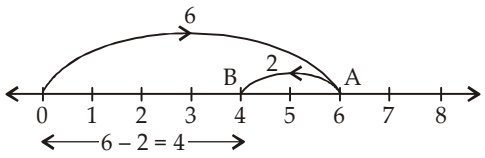
5. (*i*) To represent 7 – 2 on number line. We draw a line starting from 0, we move 7 steps to the right and mark as A. Now, starting from point A, move 2 steps left to A and arrive at B. Then,



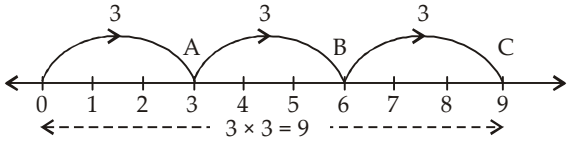
(*ii*) To represent 8 – 6 on number line. We draw a number line starting from 0, we move 8 steps to the right and mark point A. And from point A move 6 steps left to A and arrive at B.



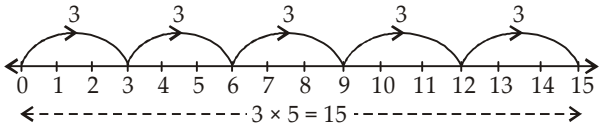
(*iii*) To represent 6 – 2 on number line.



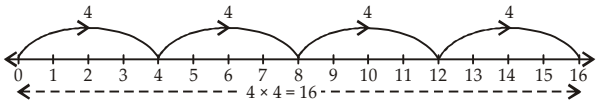
6. (*i*) To represent 3 × 3 on number line. We draw a number line, starting from 0 we move 3 steps to the right of 0 to arrive A. We make two more such moves starting from A (total 3 moves of 3 steps) to reach finally at point C which represents 9.



(*ii*) 3 × 5



(*iii*)



EXERCISE 2.2

1. (*i*) Yes, the sum of two even numbers is an even number.

Example : 47942 + 67432 = 115374

(An even number)

(*ii*) No, the sum of two odd numbers is not an odd number.

Example : 97431 + 74717 = 172148

(An even number)

2. (*i*) 157 + 376 + 413 + 524

By suitable arrangement

= (157 + 413) + (376 + 524)

= 570 + 900

= 1470

(*ii*) 23 + 446 + 377 + 54

= (23 + 377) + (446 + 54)

(By suitable arrangement)

= 400 + 500

= 900

(*iii*) 4001 + 3768 + 2999 + 1232

= (4001 + 2999) + (3768 + 1232)

(By suitable arrangement)

= 7000 + 5000

= 12000

3.

	C_1 ↓	C_2 ↓	C_3 ↓	C_4 ↓	C_5 ↓
R_1 →	24	**31**	8	15	22
R_2 →	**30**	12	14	21	**23**
R_3 →	11	13	20	27	**29**
R_4 →	17	19	26	28	**10**
R_5 →	18	**25**	**32**	9	16

Sum of diagonal numbers

= 24 + 12 + 20 + 28 + 16 = 100

In Row R_1 = 100 – (24 + 8 + 15 + 22) = 31

In Column C_1 = 100 – (24 + 11 + 17 + 18) = 30

In Row R_2 = 100 – (30 + 12 + 14 + 21) = 23

In Row R_3 = 100 – (11 + 13 + 20 + 27) = 29

In Row R_4 = 100 – (17 + 19 + 26 + 28) = 10

In Column C_2 = 100 – (31 + 12 + 13 + 19) = 25

In Column C_3 = 100 – (8 + 14 + 20 + 26) = 32

4. (*i*) 325 + 4964

$$\begin{array}{r} 3\ 2\ 5 \\ +\ 4\ 9\ 6\ 4 \\ \hline 5\ 2\ 8\ 9 \end{array} \qquad \begin{array}{r} 4\ 9\ 6\ 4 \\ +\ \ \ 3\ 2\ 5 \\ \hline 5\ 2\ 8\ 9 \end{array}$$

Hence, 325 + 4964 = 4964 + 325 = 5289

(*ii*) 3529 + 741

$$\begin{array}{r} 3\ 5\ 2\ 9 \\ +\ \ \ 7\ 4\ 1 \\ \hline 4\ 2\ 7\ 0 \end{array} \qquad \begin{array}{r} \ \ \ 7\ 4\ 1 \\ +\ 3\ 5\ 2\ 9 \\ \hline 4\ 2\ 7\ 0 \end{array}$$

Hence, 3529 + 741 = 741 + 3529 = 4270

(*iii*) 973 + 657

$$\begin{array}{r} 9\ 7\ 3 \\ +\ 6\ 5\ 7 \\ \hline 1\ 6\ 3\ 0 \end{array} \qquad \begin{array}{r} 6\ 5\ 7 \\ +\ 9\ 7\ 3 \\ \hline 1\ 6\ 3\ 0 \end{array}$$

Hence, 973 + 657 = 657 + 973 = 1630

5. 34 + 35 + 36 + 37 + 65 + 63 + 64 + 66

(By suitable arrangement)

= (34 + 66) + (35 + 65) + (36 + 64) + (37 + 63)

= 100 + 100 + 100 + 100

= 400

EXERCISE 2.3

1. (*i*)

$$\begin{array}{r} 3\ 9\ 9\ 9 \\ -\ 2\ 6\ 7\ 8 \\ \hline 1\ 3\ 2\ 1 \end{array}$$

Check:

$$\begin{array}{r} 1\ 3\ 2\ 1 \\ +\ 2\ 6\ 7\ 8 \\ \hline 3\ 9\ 9\ 9 \end{array}$$

(*ii*)
$$\begin{array}{r} 85659 \\ -\ 38926 \\ \hline 46733 \end{array}$$

Check:
$$\begin{array}{r} 46733 \\ -\ 38926 \\ \hline 85659 \end{array}$$

(*iii*)
$$\begin{array}{r} 745652 \\ -\ 482310 \\ \hline 263342 \end{array}$$

Check:
$$\begin{array}{r} 263342 \\ +\ 482310 \\ \hline 745652 \end{array}$$

2. The greatest number of seven digits is 9999999. The difference of 9999999 and 84726251 will give us the required number.

$$\begin{array}{r} 9999999 \\ -\ 8476251 \\ \hline 1523748 \end{array}$$

Hence, the required number is 1523748.

3. The largest number of four digits = 9999
The smallest number of six digits = 100000
Therefore, the difference between them

$$\begin{array}{r} 100000 \\ -\ \ 9999 \\ \hline 90001 \end{array}$$

Hence the required difference is 90001.

4. (*i*) 7 6 □ 7 5 7 4 ..... I Row
– 8 9 □ 9 9 □ ..... II Row
□ 8 0 3 □ 7 5

Since, 9 + 0 = 9, the 10 thousands digit in Ist row.

$$\begin{array}{r} 76\boxed{9}574 \\ -\ \ 89\square 99\square \\ \hline \square 8035\square \end{array}$$

Since, unit digit is II row is 9 because 14 – 5 = 9

$$\begin{array}{r} 76\boxed{9}574 \\ -\ \ 89\square 99\boxed{9} \\ \hline \square 8035\square \end{array}$$

Since, 1574 – 999 = 575. Therefore,

$$\begin{array}{r} 76\boxed{9}574 \\ -\ \ 89\square 99\boxed{9} \\ \hline \square 8035\boxed{5}75 \end{array}$$

The difference of 7574 and 3575 will gives the number in II row

$$\begin{array}{r} 7574 \\ -\ 3575 \\ \hline 3999 \end{array}$$

$$\begin{array}{r} 76\boxed{9}574 \\ -\ \ 89\boxed{3}99\boxed{9} \\ \hline \square 8035\boxed{5}75 \end{array}$$

The difference of 7697574 and 893999

$$\begin{array}{r} 7697574 \\ -\ \ 893999 \\ \hline 6803575 \end{array}$$

Hence,

$$\begin{array}{r} 76\boxed{9}574 \\ -\ \ 89\boxed{3}99\boxed{9} \\ \hline \boxed{6}8035\boxed{5}75 \end{array}$$

(*ii*) 5 0 0 0 1 0 6 ..... I Row
– □ □ 6 7 9 8 ..... II Row
4 0 2 □ □ □ □

The difference between 10106 and 6798

$$\begin{array}{r} 10106 \\ -\ 6798 \\ \hline 3308 \end{array}$$

$$\begin{array}{r} 5000106 \\ -\ \square\square 6798 \\ \hline 4023308 \end{array}$$

Since, the difference of 5000106 and 4023308 will gives the numbers of II row.

$$\begin{array}{r} 5000106 \\ -\ 4023308 \\ \hline 976798 \end{array}$$

Hence,

$$\begin{array}{r} 5000106 \\ -\ \boxed{9}\boxed{7}6798 \\ \hline 4023308 \end{array}$$

5. The given number = 543728. If the digit 4 and 7 of the given number are interchanged, then the new number = 573428.

Now, difference between both the numbers

$$\begin{array}{r} 573428 \\ -\ 543728 \\ \hline 29700 \end{array}$$

6. Total population of a town = 60,000

Number of males = 32457

Number of females = 13296

Total number of males and females
= 32457 + 13296

$$\begin{array}{r} 3\ 2\ 4\ 5\ 7 \\ +\ 1\ 3\ 2\ 9\ 6 \\ \hline 4\ 5\ 7\ 5\ 3 \end{array}$$

Hence, population of childrens = 60000 – 45753

$$\begin{array}{r} 6\ 0\ 0\ 0\ 0 \\ -\ 4\ 5\ 7\ 5\ 3 \\ \hline 1\ 4\ 2\ 4\ 7 \end{array}$$

Hence, population of children of a town is 14247.

7. The least number formed by the digits 0, 1, 3, 5, 7 = 10357.

The greatest number formed by the digits 0, 2, 4, 6, 8 = 86420

The difference of both the numbers.

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

Hence, the required number is 76063.

8.

Deposited money =	₹ 3,75,000
Withdrew of money =	₹ 49,265
Balance =	₹ 3,25,735

Hence, ₹ 3,25,735 were left in Sahil's account.

EXERCISE 2.4

1. (*i*) 4 × 694 × 125 × 2
= (4 × 125 × 2) × 694
= 1000 × 694
= 694000

(*ii*) 5 × 3996 × 20 × 2
= (5 × 20) × (3996 × 2)
= 100 × 7992
= 799200

(*iii*) 2 × 9897 × 5
= (2 × 5) × 9897
= 10 × 9897
= 98970

(*iv*) 725 × 8 × 50 × 20
= (725 × 8) × (50 × 20)
= 5800 × 1000
= 5800000

2. (*i*) (7909 × 98) + (7909 × 2)
= 7909 × (98 + 2)
(Distributive law of multiplication over addition)
= 7909 × 100
= 790900

(*ii*) (43987 × 45) + (43987 × 55)
= 43987 × (45 + 55)
(Distributive law of multiplication over addition)
= 43987 × 100
= 4398700

(*iii*) (1297 × 38) + (1297 × 62)
= 1297 × (38 + 62)
(Distributive law of multiplication over addition)
= 1297 × 100
= 129700

(*iv*) (7198 × 197) – (97 × 7198)
= 7198 × (197 – 97)
(Distributive law of multiplication over subtraction)
= 7198 × 100
= 719800

3. (*i*) 7909 × 991 = 7909 × (1000 – 9)
= (7909 × 1000) – (7909 × 9)
(Distributive law of multiplication over subtraction)
= 7909000 – 71181
= 7837819
Hence, 7909 × 991 – 7837819

(*ii*) 4980 × 507 = 4980 × (500 + 7)
= (4980 × 500) + (4980 × 7)
(Distributive law of multiplication over addition)
= 2490000 + 34860
= 2524860
Hence, 4980 × 507 = 2524860

(*iii*) 815 × 754
= (800 + 10 + 5) × 754
(800 × 754) + (10 × 754) + (5 × 754)
(Distributive law of multiplication over addition)
= 603200 + 7540 + 3770
= 614510
Hence, 815 × 754 = 614510

(*iv*) $3023 \times 612 = (3000 + 20 + 3) \times 612$

$= 3000 \times 612 + 20 \times 612 + 3 \times 612$

(Distributive law of multiplication over addition)

$= 1836000 + 12240 + 1836$

$= 1850076$

Hence, $3023 \times 612 = 1850076$

(*v*) $356 \times 106 = 356 \times (100 + 6)$

$= (356 \times 100) + (356 \times 6)$

(Distributive law of multiplication over addition)

$= 35600 + 2136$

$= 37736$

Hence, $356 \times 106 = 37736$

4. The largest 3-digit number = 999

Sum of 2456 and 344 = 2456 + 344 = 2800

Now, product of 999 and 2800 = 2800×999

$= 2800 + (1000 - 1)$

$= (2800 \times 1000) - (2800 \times 1)$

(Distributive law of multiplication over subtraction)

$= 2800000 - 2800$

$= 2797200$

Hence, the required products is 2797200.

5. In 1 day, number of toys to be made = 3265

$\therefore$ In 25 days, number of toys will made = 3265×25

$= 3265 \times (20 + 5)$

$= (3265 \times 20) + (3265 \times 5)$

(Distributive law of multiplication over addition)

$= 65300 + 16325$

$= 81625$

Hence, 81625 toys will made in a month of 25 working days.

6. The cost of 1 computer = ₹ 21346

$\therefore$ The cost of 125 computers = ₹ (21346×125)

$= ₹ \{21346 \times (100 + 20 + 5)\}$

$= ₹ \{(21346 \times 100) + (21346 \times 20) + (21346 \times 5)\}$

(By distributive law of multiplication over addition)

$= ₹ (2134600 + 426920 + 106730)$

$= ₹ 2668250$

Hence, the cost of 125 computers is ₹ 26,68,250.

7. The cost of 1 chair = ₹ 375

$\therefore$ The cost of 40 chairs = ₹ (375×40)

And, the cost of 1 table = ₹ 125

$\therefore$ The cost of 40 tables = ₹ (125×40)

Total cost of 40 chairs and 40 tables

$= ₹ [(375 \times 40) + (125 \times 40)]$

$= ₹ [(375 + 125) \times 40]$

(Distributive law of multiplication over addition)

$= ₹ (500 \times 40)$

$= ₹ 20000$

Hence, the total cost of 40 chairs and 40 tables is ₹ 20000.

8. Number of pages in 1 book = 150

$\therefore$ Number of pages in 1652 books = 150×1652

$= (100 + 50) \times 1652$

$= (100 \times 1652) + (50 \times 1652)$

(By distributive law of multiplication over addition).

$= 165200 + 82600$

$= 247800$

Hence, total number of pages in 1652 books is 247800.

9. Distance Covered in 1 hour = 68 km

$\therefore$ Distance covered in 99 hours = (68×99)km

$= [68 \times (100 - 1)]$km

$= [(68 \times 100) - (68 \times 1)]$km

$= 6800 - 68$

$= 6732$ km

Hence, a truck will be a covered distance of 6732 km in 99 hours.

10. The greatest number formed by the digits

0, 1, 2, 3, 4, 5, 6 = 6543210

Product of 63538 and 35 = 63538×35

$= 63538 \times (30 + 5)$

$= (63538 \times 30) + (63538 \times 5)$

(By distributive law multiplication over addition)

$= 1906140 + 317690$

$= 2223830$

Now, the difference of 6543210 and 2223830

$$\begin{array}{r} 6\,5\,4\,3\,2\,1\,0 \\ -\,2\,2\,2\,3\,8\,3\,0 \\ \hline 4\,3\,1\,9\,3\,8\,0 \end{array}$$

Hence, the required difference is 4319380.

11. The product of units digits = $28 = 4 \times 7$, units digits are 4 and 7.

Now, product of tens digits = $15 = 3 \times 5$, tens digits are 3 and 5.

Two humbers are either 34 and 57 or a 37 and 54.

(*i*) $34 \times 57 = 34 \times (50 + 7)$

$= (34 \times 50) + (34 \times 7)$

(Distributive law of multiplication over addition)

$= 1700 + 238$

$= 1938$

(*ii*) $37 \times 54 = 37 \times (50 + 4)$

$= (37 \times 50) + (37 \times 4)$

$= 1850 + 148$

$= 1998$

It is the given product.

Hence, the required digits are 37 and 54.

EXERCISE 2.5

1. (*i*) 92619 ÷ 123

$$\begin{array}{r|l} 123 & 92619 \\ -861 & \\ \hline 651 & \\ -615 & \\ \hline 369 & \\ -369 & \\ \hline 0 & \end{array} \quad 753$$

Check: $753 \times 123 = 753 \times (100 + 20 + 3)$

$= (753 \times 100) + (753 \times 20) + (753 \times 3)$

(Distributive law of multiplication over addition)

$= 75300 + 15060 + 2259$

$= 92619$

(*ii*) 612846 ÷ 582

$$\begin{array}{r|l} 582 & 612846 \\ -582 & \\ \hline 3084 & \\ -2910 & \\ \hline 1746 & \\ -1746 & \\ \hline 0 & \end{array} \quad 1053$$

Check: 1053×582

$= (1000 \times 50 + 3) \times 582$

$= (1000 \times 582) + (50 \times 582) \times (3 \times 582)$

(By distributive law of multiplication over addition)

$= 582000 + 29100 + 1746$

$= 612846$

(*iii*) 75808 ÷ 103

$$\begin{array}{r|l} 103 & 75808 \\ -721 & \\ \hline 370 & \\ -309 & \\ \hline 618 & \\ -618 & \\ \hline 0 & \end{array} \quad 736$$

Check: $736 \times 103 = 736 \times (100 + 3)$

$= (736 \times 100) + (736 \times 3)$

$= 73600 + 2208$

$= 75808$

(*iv*) 607920 ÷ 816

$$\begin{array}{r|l} 816 & 607920 \\ -5712 & \\ \hline 3672 & \\ -3264 & \\ \hline 4080 & \\ -4080 & \\ \hline 0 & \end{array} \quad 745$$

Check : $745 \times 816 = 745 \times (800 + 10 + 6)$

$= (745 \times 800) + (745 \times 10) + (745 \times 6)$

(By distributive law of multiplication over addition)

$= 596000 + 7450 + 4470$

$= 607920$

(*v*) 1245616 ÷ 2032

$$\begin{array}{r|l} 2032 & 1245616 \\ -12192 & \\ \hline 2641 & \\ -2032 & \\ \hline 6096 & \\ -6096 & \\ \hline 0 & \end{array} \quad 613$$

Check: 613×2032

$= 613 \times (2000 + 30 + 2)$

$= (613 \times 2000) + (613 \times 30) \times (613 \times 2)$

(By distributive law of multiplication over addition)

$= 1226000 + 18390 \times 1226$

$= 1245616$

(*vi*) 30400 ÷ 64

$$\begin{array}{r|l} 64 & 30400 \\ -256 & \\ \hline 480 & \\ -448 & \\ \hline 320 & \\ -320 & \\ \hline 0 & \end{array} \quad 475$$

Check: 475×64

$= 475 \times (60 + 4)$

$= (475 \times 60) + (475 \times 4)$

$= 28500 + 1900$

$= 30400$

2. The greatest 7-digits number = 9999999

The greatest 3-digit number = 999

$$\begin{array}{r|l} 999 & 9999999 \\ -999 & \\ \hline 999 & \\ -999 & \\ \hline 9 & \end{array} \quad 1001$$

The greatest 7-digit number which divisible by 3-digit greatest number = 9999999 – 9

= 9999990

Hence, required number is 9999990.

3. The greatest 4-digit number = 9999

$$\begin{array}{r|l} 42 & 9999 \\ -84 & \\ \hline 159 & \\ -126 & \\ \hline 339 & \\ -336 & \\ \hline 3 & \end{array} \quad 238$$

The greatest 4-digit number that is exactly divisible by 42 = 9999 – 3

= 9996

Hence, the required number is 9996.

4. An aeroplane covers a distance of 452 km in 1 hr.

∴ Aeroplane covers a distance of 1 km in $\frac{1}{452}$ hrs.

∴ Aeroplane covers a distance of 3978052 km in $\frac{3978052}{452}$ hrs.

$$\begin{array}{r|l} 452 & 3978052 \\ -3616 & \\ \hline 3620 & \\ -3616 & \\ \hline 452 & \\ -452 & \\ \hline 0 & \end{array} \quad 8801$$

Hence, 8801 hours will it take to cover a distance of 3978052 km.

5. ∴ 246 apples can be packed in 1 carton.

∴ 2755200 apples will be packed in $\frac{2755200}{246}$ Cartons.

$$\begin{array}{r|l} 246 & 2755200 \\ -246 & \\ \hline 295 & \\ -246 & \\ \hline 492 & \\ -492 & \\ \hline 0 & \end{array} \quad 11200$$

Hence, 11200 cartons will be required to packed all the apples.

$30 \div 5 = 30 \div (3 + 2)$

$= (30 \div 3) + (30 \div 2)$

$= 10 + 15$

$= 25$

Thus,

$30 \div 5 = 30 \div (3 + 2) \neq (30 \div 3) + (30 \div 2)$

Hence, "Division does not distribute over addition".

7. The required number (dividend)

= quotient × divisor + remainder

= 26 × 32 + 4

= 832 + 4

= 836

Hence, the required number is 836.

8. The required number (dividend)

= quotient × divisor + remainder

= 39 × 57 + 7

= {(40 – 1) × 57} + 7

= [(40 × 57) – (1 × 57)] + 7

(distributive law of multiplication over subtraction)

= (2280 – 57) + 7

= 2223 + 7

= 2230

Hence, the required number is 2230.

9. If we divide 56088 by 123, then quotient will be the required number. Then

$$\begin{array}{r|l} 123 & 56088 \\ -492 & \\ \hline 688 & \\ -615 & \\ \hline 738 & \\ -738 & \\ \hline 0 & \end{array} \quad 456$$

Hence, the required other number is 456.

10. Dividend = 62345

divisor = 199

Remainder = 58

We know that

Dividend = Divisor × Quotient + Remainder

substituting the values, we get

62345 = Quotient × 199 + 58

$\Rightarrow$ Quotient × 199 = 62345 – 58

= 62287

$\Rightarrow$ Quotient = $\frac{62287}{199}$

$$
\begin{array}{r|l}
199 & 62287 \\
-597 & \\
\hline
258 & \\
-199 & \\
\hline
597 & \\
-597 & \\
\hline
0 &
\end{array}
\quad 313
$$

Hence, required quotient is 313.

11. Dividend = 34567

Divisor = 92

Remainder = 67

We know that,

Dividend = Divisor × Quotient + Remainder

Substituting the values, weget

$$34567 = \text{Quotient} \times 92 + 67$$

$$\Rightarrow \quad \text{Quotient} \times 92 = 34567 - 67$$

$$= 34500$$

$$\Rightarrow \quad \text{Quotient} = \frac{34500}{92}$$

$$
\begin{array}{r|l}
92 & 34500 \\
-276 & \\
\hline
690 & \\
-644 & \\
\hline
460 & \\
-460 & \\
\hline
0 &
\end{array}
\quad 375
$$

Hence, the required quotient is 375.

EXERCISE 2.6

1.

$1 \times 1 = 1$

$11 \times 11 = 121$

$111 \times 111 = 12321$

$1111 \times 1111 =$ **1234321** (By observing the given pattern)

$11111 \times 11111 =$ **123454321**

2. $(7 \times 2) - 3 = 11$

$(7 \times 3) - 6 = 15$

$(7 \times 4) - 9 = 19$

$(7 \times 5) - 12 = 23$

By observing the given pattern, we have

$(7 \times 6) - 15 = 27$

$(7 \times 7) - 18 = 31$

$(7 \times 8) - 21 = 35$

$(7 \times 9) - 24 = 39$

3. $8 \times 1 + 1 = 9$

$8 \times 3 + 1 = 25$

$8 \times 6 + 1 = 49$

$8 \times 10 + 1 = 81$

By observing the given pattern, we have

$8 \times 15 + 1 = 121$

$8 \times 21 + 1 = 169$

$8 \times 28 + 1 = 225$

4. $1 \times 8 + 1 = 9$

$12 \times 8 + 2 = 98$

$123 \times 8 + 3 = 987$

By observing the given pattern, we have

$1234 \times 8 + 4 = 9876$

$12345 \times 8 + 5 = 98765$

$123456 \times 8 + 6 = 987654$

MULTIPLE CHOICE QUESTION

1. Option (*b*) is correct.
"The smallest whole number is 0."

2. Option (*a*) is correct.
"The whole number which is not a natural number is 0."

3. Option (*c*) is correct.
"since, $6 \div 0$ is not defined."

4. Option (*c*) is correct.
"Multiplicative identity for whole numbers is 1."

5. Option (*b*) is correct.
"9 whole numbers are smaller then 9."

6. Option (*c*) is correct.
"Division is the inverse of multiplication."

7. The whole number p such that $p \div p = p$ is 1.
Hence, option (*b*) is correct.

8. Option (*c*) is correct.
"$2 \div 7$ does not gives a whole number."

9. Option (*c*) is correct.
"The relation $a \times b = b \times a$ is hold commutative law."

10. The given number = 795

Number obtain by reversing digits = 597

Then, difference between them

$$
\begin{array}{r}
7\ 9\ 5 \\
-\ 5\ 9\ 7 \\
\hline
1\ 9\ 8
\end{array}
$$

Hence, Option (*a*) is correct.

11. The successor of the number 4578199 = 4578199 + 1
= 4578200

Hence, option (*b*) is correct.

12. Option (*d*) is correct.

13. The predecessor of 99840 = 99840 − 1
= 99839

Hence, option (*c*) is correct.

MENTAL MATH CORNER

A. Fill in the blanks :

1. The whole number which is not used as a divisor is 0 .

2. 9 × (7 × 8) = (9 × 7) × 8 shows that multiplication of whole numbers is associative.

3. On the number line 29 lies on left side of 30.

4. 9999 = 9999 + 0 .

5. 198 × 0 = 0.

6. 7283 − 0 = 7283

7. 869 − (543 ÷ 543) = 868 .

∵ 869 − (543 ÷ 543) = 869 − 1
= 868

8. 27 × 9 = 27 × 10 − 27 × 1 .

∵ 27 × 9 = 27 × (10 − 1)
= (27 × 10) − (27 × 1)

(By distributive law of multiplication over addition)

9. The greatest 4-digit number of different digits is 9876 .

10. The smallest 4-digit number of different digit is 1023 .

11. (998 × 8) + (998 × 2) = 9980 .

∵ (998 × 8) + (998 × 2) = 998 × (8 + 2)

(By distributive law of multiplication over addition)
= 998 × 10
= 9980

12. (605 × 109) − (605 × 9) = 60500 .

∵ (605 × 109) − (605 × 9) = 605 × (109 − 9)
= 605 × 100
= 60500.

B. 1. All whole numbers are natural numbers. **(False)**

2. Product of any two even numbers is always an even number. **(True)**

3. The successor of the greatest 2-digit number is the smallest 3-digit number. **(True)**

4. The predecessor of two-digit number is never a single digit number. **(False)**

5. 69 ÷ 0 = 0 ÷ 69. **(False)**

6. A number which is to be divided is called the dividend. **(True)**

7. If *a*, *b*, *c* are whole numbers, ($b \neq 0$, $c \neq 0$) and $a \div b = c$, then $b \times c = a$. **(True)**

8. Every square number is also a rectangular number. **(True)**

9. The product of two odd number is always an odd number. **(True)**

10. The successor of a whole number is always one more than the whole number. **(True)**

REVIEW EXERCISE

1. Divisor = 53
Quotient = 12
Remainder = 4

We know that,
Dividend = Quotient × Divisor + Remainder
Substituting the values, we have
Dividend = 12 × 53 + 4
= {(10 + 2)} × 53 + 4
= {(10 × 53) + (2 × 53)} + 4

(By distributive law of multiplication over addition)
= (530 + 106) + 4
= 640

Hence, the required number is 640.

2. (*i*) 62920 ÷ 34

$$\begin{array}{r|l} 34 & 6290 \\ -34 & \\ \hline 289 & \\ -272 & \\ \hline 170 & \\ -170 & \\ \hline 0 & \end{array} \quad 185$$

Check: 185 × 34 = 185 × (30 + 4)
= (185 × 30) + (185 × 4)
= 5550 + 740
= 6290

(*ii*) 71400 ÷ 136

$$\begin{array}{r|l} 136 & 71400 \\ -680 & \\ \hline 340 & \\ -272 & \\ \hline 380 & \\ -380 & \\ \hline 0 & \end{array} \quad 525$$

Check: 525 × 136 = 525 × (100 + 36)
= (525 × 100) + (525 × 36)
= 52500 + 18900
= 71400

3.

	C_1 ↓	C_2 ↓	C_3 ↓
R_1 →	**17**	10	15
R_2 →	**12**	14	**16**
R_3 →	13	**18**	**11**

Sum of the number of the diagonal

= 15 + 14 + 13 = 42

Therefore,

In Row 1 (R_1) = 42 – (10 + 15) = 42 – 25 = 17

In Column 1 (C_1) = 42 – (17 + 13) = 42 – 30 = 12

In Row 2 (R_2) = 42 – (12 + 14) = 42 – 26 = 16

In Column 2 (C_2) = 42 – (10 + 14) = 42 – 24 = 18

In Column 3 (C_3) = 42 – (15 + 16) = 42 – 31 = 11

4. (*i*) 8, 0, 6, 3, 4

The greatest 5-digit number (repeatition not allowed) = 86430

The smallest 5-digit number = 30468

(*ii*) 3, 0, 5, 7, 4

The greatest 5-digit number = 75430

The smallest 5-digit number = 30457

5. The greatest 4-digit number using four different digits, 5 occurs at tens place = 9857

The smallest 4-digit number using four different digits, 5 occur at tens places = 1052

6. Each student paid maney = ₹ 410

∴ 1425 student will paid money = ₹ (1425 × 410)

= ₹ {1425 × (400 + 10)}

= ₹ {(1425 × 400) + (1425 × 10)}

= ₹ {570000 + 14250}

= ₹ 854250

Hence, ₹ 584250 was collected for the tour.

7. 35

$\frac{-5}{30}$ → first time

$\frac{-5}{25}$ → second time

$\frac{-5}{20}$ → third time

$\frac{-5}{15}$ → fourth time

$\frac{-5}{10}$ → fifth time

$\frac{-5}{5}$ → sixth time

$\frac{-5}{0}$ → seventh time

Hence, 35 ÷ 5 = 7.

8. Largest 3-digit number = 999

sum of 4325 and 1015 = 4325 + 1015

= 5340

Now, 5340 × 909

Product of 999 and 5350

= 5340 × (1000 – 1)

= (5340 × 1000) – (5340 × 1)

(By distributive law of multiplication over subtraction)

= 5340000 – 5340 = 5334660

Hence, required product is 5334660.

9. (*i*) 7998 × 56 + 7998 × 35 + 9 × 7998

= 7998 × (56 + 35 + 9)

(By distributive law of multiplication over addition)

= 7998 × 100

= 799800

(*ii*) 4997 × 68 + 4997 × 44 – 4997 × 12

= 4997 × (68 + 44 – 12)

= 4997 × (112 – 12)

= 4997 × 100

= 499700

10. If we divide 53163 by 99, then the quotient will be the required number.

Therefore,

$$\begin{array}{r} 99\overline{)53163}(537 \\ -495 \\ \hline 366 \\ -297 \\ \hline 693 \\ -693 \\ \hline 0 \end{array}$$

Hence, the required number is 537.

11. If we divide 53678 by 384, then the remainder will be the required least number.

$$\begin{array}{r} 384\overline{)53678}(139 \\ -384 \\ \hline 1527 \\ -1152 \\ \hline 3758 \\ -3456 \\ \hline 302 \end{array}$$

Hence, the required least number is 302.

12. The original number = 49635.

If the digits 9 and 3 of the number interchanged. Then

The new number = 43695

The difference of original and new number

$$\begin{array}{r} 4\ 9\ 6\ 3\ 5 \\ -\ 4\ 3\ 6\ 9\ 5 \\ \hline 5\ 9\ 4\ 0 \end{array}$$

Hence, required difference is 5940.

13. Ajeet = ₹ 9250

Upen = ₹ 12428

Rajiv = ₹ 24962

Total = ₹ 46640

Ravi had total mony = ₹ 52000

Balance money = ₹ 52000 – ₹ 46630

$$\begin{array}{r} ₹\ 52000 \\ ₹\ 46640 \\ \hline ₹\ 5360 \end{array}$$

HOTS QUESTIONS

1. $a\overline{)\ b\ }(q$

$\underline{-aq}$

r Where $0 \le r < a$

Then, $b = aq + r$

2. Yes, if $n = 1$,

$1 \div 1 = 1$

All whole numbers except 1.

Puzzle

(*i*) $(4 \times 4 \div 4) - 4 = 0$

(*ii*) $(4 + 4 - 4) \div 4 = 1$

(*iii*) $4 \times 4 \div (4 + 4) = 2$

(*iv*) $(4 + 4 + 4) \div 4 = 3$

VALUE BASED QUESTION
SUMMATIVE ASSESSMENT

Use number 1 to 8 to fill the circles:

$$\begin{array}{ccccc} (8) & \div & (4) & = & (2) \\ - & & \times & & \\ (7) & & (3) & & \\ \hline (1) & + & (5) & = & (6) \end{array}$$

There are multiple solutions to any problem. We just need to find them.