

Chapter 2

Whole numbers

Exercise 2.1

Question 1.

Write the smallest whole number. Can you write the largest whole number ?

Solution :

Smallest whole number = 0

No, we can not write the largest whole number.

Question 2 :

Write the successor of each of the following numbers :

(i) 3999

(ii) 378915

(iii) 5001299

Solution :

Successor numbers :

(i) $3999 + 1 = 4000$

(ii) $378915 + 1 = 378916$

(iii) $5001299 + 1 = 5001300$

Question 3.

Write the predecessor of each of the following numbers :

(i) 500

(ii) 38794

(iii) 54789011

Solution:

Predecessor numbers :

(i) $500 - 1 = 499$

(ii) $38794 - 1 = 499$

(iii) $54789011 - 1 = 54789010$

Question 4.

Write the whole number (in each of the following) whose successor is :

(i) 50795

(ii) 720300

(iii) 8300000

Solution:

The required whole number = predecessor of given number :

(i) $50975 - 1 = 50974$

The required whole number = predecessor of given number:

(i) $50795 - 1 = 50794$

(ii) $720300 - 1 = 720299$

(iii) $8300000 - 1 = 8299999$

Question 5.

Write the whole number (in each of the following) whose predecessor is:

- (i) 5347
- (ii) 72399
- (iii) 3012999

Solution:

The required whole number = successor of given number:

- (i) $5347 + 1 = 5348$
- (ii) $72399 + 1 = 72400$
- (iii) $3012999 + 1 = 3013000$

Question 6.

Write next three consecutive whole numbers of the following numbers :

- (i) 79
- (ii) 598
- (iii) 35669

Solution:

- (i) 80, 81, 82
- (ii) 599, 600, 601
- (iii) 35670, 35671, 35672

Question 7.

Write three consecutive whole numbers occurring just before 320001.

Solution:

The three consecutive whole numbers occurring just before 320001 are :

$$320001 - 1 = 320000 - 1 = 319999 - 1 = 319998$$

these are : 320000, 319999, 319998

Question 8:

- (i) How many whole numbers are there between 38 and 68 ?
(ii) How many whole numbers are there between 99 and 300 ?

Solution:

(i) The whole numbers between 38 and 68 are : 39, 40, 41,, 67
 $= 67 - 38 = 29$

(ii) The whole numbers between 99 and 300 are : 100, 101, 102, ..., 299
 $= 299 - 99 = 200$

Question 9.

Write all whole numbers between 100 and 200 which do not change if the digits are written in reverse order.

Solution:

The whole numbers between 100 and 200 which do not change if the digits are written in reverse order are :

101, 111, 121, 131, 141, 151, 161, 171, 181, 191

Question 10.

How many 2-digit whole numbers are there between 5 and 92 ?

Solution:

2-digit numbers between 5 and 92 will be from 10 to 91 i.e. $91 - 9 = 82$

Question 11.

How many 3-digit whole numbers are there between 72 and 407 ?

Solution:

3-digit whole numbers will be from 100 to 406 i.e. $406 - 99 = 307$.

Exercise 2.2

Question 1.

Fill in the blanks to make each of the following a true statement :

(i) $378 + 1024 = 1024 + \dots\dots$

(ii) $337 + (528 + 1164) = (337 + \dots\dots) + 1164$

(iii) $(21 + 18) + \dots\dots\dots = (21 + 13) + 18$

(iv) $3056 + 0 = \dots\dots\dots = 0 + 3056$

Solution:

(i) $378 + 1024 = 1024 + 378$ (Commutative property of addition)

(ii) $337 + (528 + 1164) = (337 + 528) + 1164$ (Associative law of addition)

(iii) $(21 + 18) + 13 = (21 + 13) + 18$ (Associative law of addition)

(iv) $3056 + 0 = 3056 = 0 + 3056$

Question 2.

Add the following numbers and check by reversing the order of addends :

(i) $3189 + 53885$

(ii) $33789 + 50311$.

Solution :

(i) $3189 + 53885 = 57074$

Check $53885 + 3189 = 57074$

$\therefore 57074$

$$(ii) 33789 + 50311 = 84100$$

$$\text{Check } 50311 + 33879 = 84100$$

$$\therefore 84100$$

Question 3.

By suitable arrangements, find the sum of :

$$(i) 311, 528, 289$$

$$(ii) 723, 203, 435, 7197, 422.$$

Solution:

$$(i) 311, 528, 289$$

$$\text{sum } (311 + 289) + 528$$

$$= 600 + 528 = 1128$$

$$(ii) 723 + 834 + 66 + 277$$

$$= (723 + 277) + (834 + 66)$$

$$= 1000 + 900 = 1900$$

$$(iii) 78, 203, 435, 7197, 422$$

$$\text{sum} = (78 + 422) + (203 + 7197) + 435$$

$$= 500 + 7400 + 435$$

$$= 7900 + 435 = 8335$$

Question 4.

Fill in the blanks to make each of the following a true statement :

- (i) $375 \times 57 = 57 \times \dots\dots\dots$
- (ii) $(33 \times 16) \times 25 = 33 \times (\dots\dots \times 25)$
- (iii) $37 \times 24 = 37 \times 18 + 37 \times \dots\dots\dots$
- (iv) $7205 \times 1 = \dots\dots\dots = 1 \times 7205$
- (v) $366 \times 0 =$
- (vi) $\dots\dots\dots \times 579 = 0$
- (vii) $473 \times 108 = 473 \times 100 + 473 \times \dots\dots\dots$
- (viii) $684 \times 97 = 684 \times 100 - \dots\dots\dots \times 3$
- (ix) $0 \div \dots\dots\dots = 5 =$
- (x) $(14 - 14) \div 7 = \dots\dots\dots$

Solution:

- (i) $375 \times 57 = 57 \times 375$ (Commutative property of multiplication)
- (ii) $(33 \times 16) \times 25 = 33 \times (16 \times 25)$ (Associative law of multiplication)
- (iii) $37 \times 24 = 37 \times 18 + 37 \times \dots\dots\dots$ (Distributive law of multiplication)
- (iv) $7205 \times 1 = 7205 = 1 \times 7205$
- (v) $366 \times 0 = 0$
- (vi) $0 \times 579 = 0$
- (vii) $473 \times 108 = 473 \times 100 + 473 \times 8$
- (viii) $684 \times 97 = 684 \times 100 - 684 \times 3$
- (ix) $0 \div 5 = 0$

$$(x) (14 - 14) \div 7 = 0$$

Question 5.

Determine the following products by suitable arrangement :

(i) $4 \times 528 \times 25$

(ii) $625 \times 239 \times 16$

(iii) $125 \times 40 \times 8 \times 25$

Solution:

(i) $4 \times 528 \times 25 = 4 \times 25 \times 528$
 $= 100 \times 528 = 52800$

(ii) $625 \times 239 \times 16 = 625 \times 16 \times 239$
 $= 10000 \times 239 = 2390000$

(iii) $125 \times 40 \times 8 \times 25 = 125 \times 8 \times 40 \times 25$
 $= 1000 \times 1000 = 1000000$

Question 6.

Find the value of the following :

(i) $54279 \times 92 + 54279 \times 8$

(ii) $60678 \times 262 - 60678 \times 162$

Solution;

(i) $54279 \times 92 + 54279 \times 8$

$$= 54279 (92 + 8)$$

$$= 54279 \times 100 = 5427900$$

$$(ii) 60678 \times 262 - 60678 \times 162$$

$$= 60678 (262 - 162)$$

$$= 60678 \times 100 = 6067800$$

Question 7.

Find the following products by using suitable proerties :

$$(i) 739 \times 102$$

$$(ii) 1938 \times 99$$

$$(iii) 1005 \times 188$$

Solution:

$$(i) 739 \times 102$$

$$= 739 \times (100 + 2)$$

$$= 739 \times 100 + 739 \times 2$$

$$= 73900 + 1478 = 75378$$

$$(ii) 1938 \times 99$$

$$= 1938 \times (100 - 1)$$

$$= 1938 \times 100 - 1938 \times 1$$

$$= 193800 - 1938 = 191862$$

$$(iii) 1005 \times 188$$

$$= (1000 + 5) \times (100 + 88)$$

$$\begin{aligned}
 &= 1000 \times 100 + 1000 \times 88 + 5 \times 100 + 88 \times 5 \\
 &= 100000 + 88000 + 500 + 440 = 188940
 \end{aligned}$$

Question 8.

Divide 7750 by 17 and check the result by division algorithm.

Solution:

$$7750 \div 17$$

$$\begin{array}{r}
 455 \\
 17 \overline{) 7750} \\
 \underline{68} \\
 95 \\
 \underline{85} \\
 100 \\
 \underline{85} \\
 15
 \end{array}$$

On dividing 7750 by 17, we get

Quotient = 455 and Remainder = 15

Check by division algorithm :

Divident = Divisor $\times$ Quotient + Remainder

$$= 17 \times 455 + 15 = 7750$$

Question 9.

Find the number which when divided by 38 gives the quotient 23 and remainder 17.

Solution:

Divisor = 38, Quotient = 23

Remainder = 17

Dividend = Divisor $\times$ Quotient + remainder

$$= 38 \times 23 + 17 = 874 + 17 = 891$$

Question 10.

Which least number should be subtracted from 1000 so that the difference is exactly divisible by 35.

Solution:

On dividing 1000 by 35

we get quotient = 28 and remainder 20

we get quotient = 28 and remainder 20

$$\begin{array}{r} 28 \\ 35 \overline{) 1000} \\ \underline{-70} \\ 300 \\ \underline{-280} \\ 20 \end{array}$$

Question 11.

Which least number should be added to 1000 so that 53 divides the sum exactly.

Solution:

$$\begin{array}{r} 18 \\ 53 \overline{) 1000} \\ \underline{-53} \\ 470 \\ \underline{-424} \\ 46 \end{array}$$

On dividing 1000 by 53, we get quotient = 18 and remainder = 46. To get the remainder 0, we should add $53 - 46 = 7$ to 1000.

$\therefore 7$

Question 12.

Find the largest three-digit number which is exactly divisible by 47.

Solution:

Largest three digit no. = 999

$$\begin{array}{r} 21 \\ 47 \overline{) 999} \\ \underline{-94} \\ 59 \\ \underline{-47} \\ 12 \end{array}$$

On dividing 999 by 47, we get

Quotient = 21 and Remainder = 12

So on subtracting 12 from 999, we get

$$999 - 12 = 987$$

Question 13.

Find the smallest five-digit number which is exactly divisible by 254.

Solution :

Smallest 5 digit number = 10000

$$\begin{array}{r} 39 \\ \hline 254 \overline{) 10000} \\ \underline{- 762} \\ 2380 \\ \underline{- 2286} \\ 94 \end{array}$$

On dividing 10000 by 254, we get

Remainder = 94

So $254 - 94 = 160$ should be added to 10000 to get the smallest 5 digit number divisible by 254.

$$\therefore 10000 + 160 = 10160$$

Question 14 :

A vendor supplies 72 litres of milk to a student's hostel in the morning and 28 litres of milk in the evening every day. If the milk costs ₹ 39 per litre, how much money is due to the vendor per day ?

Solution:

Supply of milk in morning = 72 litres

Supply of milk in evening = 28 litres

Cost of per litre milk = ₹ 39

Money of per day = ₹ 39 (72 + 28)

= ₹ 39 × 100 = ₹3900

Question 15.

State whether the following statements are true (T) or false (F) :

- (i) If the product of two whole numbers is zero, then atleast one of them will be zero.
- (ii) If the Product of two whole numbers is 1, then each of them must be equal to 1.
- (iii) If a and b are whole numbers such that $a \neq 0$ and $b \neq 0$, then ab may be zero.

Solution:

(i) True

(ii) True

(iii) False

Question 16.

Replace each * by the correct digit in each of the following :

(i) 3 5 6

$$\begin{array}{r} - \quad * \, 6 \, * \\ \hline * \, 9 \end{array}$$

(ii) 6 5 0 *

$$\begin{array}{r} - * 0 * 5 \\ 4 * 5 7 \end{array}$$

$$\begin{array}{r} \text{(iii)} \quad 1 \ 7 \ 0 \ 0 \ * \ 4 \\ - \quad \quad 8 \ * \ * \ 4 \ 7 \\ \hline \quad \quad * \ 8 \ 6 \ 6 \ * \end{array}$$

Solution:

$$\begin{array}{r} \text{(i)} \quad 3 \ 5 \ 6 \\ - \ 2 \ 6 \ 7 \\ \hline \quad 8 \ 9 \end{array}$$

$$\begin{array}{r} \text{(ii)} \quad 6 \ 5 \ 0 \ 2 \\ - \ 2 \ 0 \ 4 \ 5 \\ \hline \quad 4 \ 4 \ 5 \ 7 \end{array}$$

$$\begin{array}{r} \text{(iii)} \quad 1 \ 7 \ 0 \ 0 \ 1 \ 4 \\ - \quad \quad 8 \ 1 \ 3 \ 4 \ 7 \\ \hline \quad \quad 8 \ 8 \ 6 \ 6 \ 7 \end{array}$$

Exercise 2.3

Question 1.

Using shorter method, find

(i) $3246 + 9999$

(ii) $7501 + 99999$

(iii) $5377 - 999$

(iv) $25718 - 9999$

(v) 123×999

(vi) 203×9999

Solution:

(i) $3246 + 9999$

$$= (3246 - 1) + (9999 + 1) \quad (\text{Adding and subtracting 1})$$

$$= 3245 + 10000 = 13245$$

(ii) $7501 + 99999$

$$= (7501 - 1) + (99999 + 1) \quad (\text{Adding and subtracting 1})$$

$$= 7500 + 100000 = 107500$$

$$\begin{aligned}
 & \text{(iii) } 5377 - 999 \\
 &= 5377 - (1000 - 1) \\
 &= 5377 - 1000 + 1 \\
 &= 4377 + 1 = 4378
 \end{aligned}$$

$$\begin{aligned}
 & \text{(iv) } 25718 - 9999 \\
 &= 25718 - (10,000 - 1) \\
 &= 15718 + 1 = 15719
 \end{aligned}$$

$$\begin{aligned}
 & \text{(v) } 123 \times 999 \\
 &= 123 \times (1000 - 1) \text{ (By subtracting 1)} \\
 &= 123 \times 1000 - 1 \times 123 \\
 &= 123000 - 123 = 122877
 \end{aligned}$$

$$\begin{aligned}
 & \text{(vi) } 203 \times 9999 \\
 &= 203 \times (10,000 - 1) \text{ (By subtracting 1)} \\
 &= 203 \times 10,000 - 203 \times 1 = 2030000 - 203 = 2029797
 \end{aligned}$$

Question 2.

Without using a diagram, find

(i) 9th square number

(ii) 7th triangular number

Solution:

(i) 9th square number = ?

The first square number is $1 \times 1 = 1$

The second square number is $2 \times 2 = 4$

The Third square number is $3 \times 3 = 9$

Similarly 9th square number is $9 \times 9 = 81$

(ii) 7th triangular number = ?

first triangular number = 1

second triangular number is $= 1 + 2 = 3$

Third triangular number $= 1 + 2 + 3 + 4 = 10$

Similarly 7th triangular number $= 1 + 2 + 3$

Fourth triangular number $= 1 + 2 + 3 + 4 = 10$

Similarly, 7th triangular number $= 1 + 2 + 3 + 4 + 5 + 6 + 7 = 28$

Question 3.

(i) Can a rectangular number be a square number ?

(ii) Can a triangular number be a square number ?

Solution:

(i) Yes, 9 is a square as well as rectangular number.

(ii) Yes, 8th triangular number $= 36$, which is a square number.

Question 4.

Observe the following patterns and fill in the blanks:

$$1 \times 9 + 1 = 10$$

$$12 \times 9 + 2 = 110$$

$$12 \times 9 + 3 = 1110$$

$$12 \times 9 + 4 = \dots\dots\dots$$

$$12 \times 9 + 5 = \dots\dots\dots$$

Solution:

$$1 \times 9 + 1 = 10$$

$$12 \times 9 + 2 = 110$$

$$12 \times 9 + 3 = 1110$$

$$12 \times 9 + 4 = 11110$$

$$12 \times 9 + 5 = 111110$$

Question 5.

Observe the following pattern and fill in the blanks :

$$9 \times 9 + 7 = 88$$

$$98 \times 9 + 6 = 888$$

$$987 \times 9 + 5 = 8888$$

$$9876 \times 9 + 4 = \dots\dots\dots$$

$$98765 \times 9 + 3 = \dots\dots\dots$$

Solution:

$$9 \times 9 + 7 = 88$$

$$98 \times 9 + 6 = 888$$

$$987 \times 9 + 5 = 8888$$

$$9876 \times 9 + 4 = 88888$$

$$98765 \times 9 + 3 = 888888$$

Objective Type Questions

Mental Maths

Question 1.

Fill in the blanks :

- (i) A whole number is less than all those whole numbers that lie to its on the number line.
- (ii) One more than a given whole is called its
- (iii) There is atleast one whole number between two whole numbers.
- (iv) $738 \times 335 = 738 \times (300 + 30 + \dots\dots)$
- (v) If a is a non-zero whole number and $a \times a = a$, then $a = \dots$
- (vi) $\dots\dots$ is the only whole number which is not a natural number.
- (vii) The additive identity in whole numbers is $\dots\dots\dots$

Solution:

- (i) A whole number is less than all those whole numbers that lie to its on the number line.
- (ii) One more than a given whole is called its
- (iii) There is atleast one whole number between two whole numbers.
- (iv) $738 \times 335 = 738 \times (300 + 30 + 5)$
- (v) If a is a non-zero whole number and $a \times a = a$, then $a = 1$.
- (vi) 0 is the only whole number which is not a natural number.
- (vii) The additive identity in whole numbers is 0.

Question 2.

State whether the following statements are true (T) or False (F) :

- (i) The Predecessor of a 3-digit number is always a 3-digit number.
- (ii) The Successor of a 3-digit number is always a 3-digit number.
- (iii) If a is any whole number, then $a + a = 1$.
- (iv) If a is any non-zero whole number, then $0 \div a = 0$.
- (v) On adding two different whole numbers, we always get a natural number.
- (vi) Between two whole numbers there is a whole number.
- (vii) There is a natural number which when added to a natural number, gives that number.
- (viii) If the product of two whole numbers is zero, then at least one of them is zero.

Solution:

- (i) The Predecessor of a 3-digit number is always a 3-digit number. **False**
- (ii) The successor of a 3-digit number is always a 3-digit number. **False**
- (iii) If a is any whole number, then $a \div a = 1$. **False**
- (iv) If a is any non-zero whole number, then $0 \div a = 0$. **True**
- (v) On adding two different whole numbers, we always get a natural number. **True**
- (vi) Between two whole numbers there is a whole number. **False**
- (vii) There is a natural number which when added to a natural number, gives that number. **False**
- (viii) If the product of two whole numbers is zero, then at least one of them is zero. **True**

Multiple Choice Questions

Choose the correct answer from the give four options (3 to 16) :

Question 3 :

The whole number which does not have a predecessor in whole number system is

- (a) 0
- (b) 1
- (c) 2
- (d) none of these

Solution:

0

Question 4 :

The predecessor of the smallest 4-digit number is

- (a) 99
- (b) 999
- (c) 1000
- (d) 1001

Solution:

The smallest 4-digit number = 1000

The predecessor of the given number
 $= 1000 - 1 = 999$ (b)

Question 5 :

The predecessor of 1 million is

- (a) 9999
- (b) 99999
- (c) 999999
- (d) 1000001

Solution:

predecessor is 1 less than the given number
 $= 1000000 - 1 = 999999$ (c)

Question 6.

The product of the predecessor and the successor of the greatest 2-digit number is

- (a) 9900
- (b) 9800
- (c) 9700
- (d) none of these

Solution:

Greatest 2-digit number = 99

Successor = $99 + 1 = 100$

Predecessor = $99 - 1 = 98$

$\therefore$ Product = $98 \times 100 = 9800$ (b)

Question 7.

The sum of the successor of the greatest 3-digit number and the predecessor of the smallest 3-digit number is

- (a) 1000
- (b) 1100
- (c) 1101
- (d) 1099

Solution:

Greatest 3-digit number = 999

Successor = $999 + 1 = 1000$

Smallest 3-digit number = 100

Predecessor = $100 - 1 = 99$

$\therefore$ Their sum = $1000 + 99 = 1099$ (d)

Question 8.

The number of whole numbers between 22 and 54 is

- (a) 30
- (b) 31
- (c) 32
- (d) 42

Solution:

The whole numbers between 22 and 54 are 23, 24, 25, 26, 26,...23.

Number of these number = $53 - 22 = 31$ (b)

Question 9.

The number of whole numbers between the smallest whole number and the greatest 2-digit number is

- (a) 100
- (b) 99
- (c) 98
- (d) 88

Solution :

98 (Between 0 and 99) (c)

Question 10.

If a is a whole number such that $a + a = a$, then a is equal to

- (a) 0
- (b) 1
- (c) 2
- (d) none of these

Solution :

0 (a)

Question 11.

The value of $(93 \times 63 + 93 \times 37)$ is

- (a) 930
- (b) 9300
- (c) 93000
- (d) none of these

Solution:

$$\begin{aligned} & (93 \times 63 + 93 \times 37) \\ &= 93 (63 + 37) \\ &= 93 \times 100 = 9300 \end{aligned}$$

Question 12.

Which of the following is not equal to zero ?

- (a) 0×5
- (b) $0 = 5$
- (c) $(10 - 10) + 5$
- (d) $(5 - 0) + 5$

Solution :

$$(5 - 0) + 5 = 10 \quad (d)$$

Question 13.

Which of the following statement is true ?

- (a) $21 - (13 - 5) = (21 - 13) - 5$
- (b) $21 - 13$ is not a whole number
- (c) $21 \times 1 = 21 \times 0$
- (d) $13 - 21$ is not a whole number

Solution:

$$13 - 21 \text{ is not a whole number } (d)$$

Question 14.

Which of the following statement is not true ?

- (a) Zero is the identity for multiplication of whole numbers.
- (b) Addition and multiplication both are commutative for whole numbers.
- (c) Addition and multiplication both are commutative for whole numbers.
- (d) Multiplication is distributive over addition for whole numbers.

Solution:

- (a) Zero is the identity for multiplication of whole numbers.

Question 15.

On dividing a number by 9 we get 47 as quotient and 5 as remainder.
The number is

- (a) 418
- (b) 428
- (c) 429
- (d) none of these

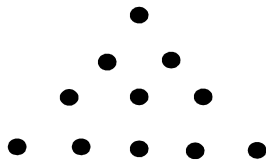
Solution : (b) 428

Question 16.

By using dot (•) pattern, which of the following numbers can be arranged in two ways namely a triangle and a rectangle ?

- (a) 12
- (b) 11
- (c) 10
- (d) 9

Solution:



10 (c)

Higher Order Thinking Skills (HOTS)

Question 1.

The height of a slippery pole is 10m and an insect is trying to climb the pole. The insect climbs 5 m in one minute and then slips down by 4m.

In how much time will insect reach the top ?

Solution:

In first 1 min, insect climbs 5 metres, then slips down 4 metres.

So it climbs 1 metres every 1 mins, except the last minute.

In the last minute, it would cover all 5 metres and reach the top.

So keeping 1 min aside for last 5 metres. Total distance to be covered is 10m, in which we subtract the last 5m for last climb. So, to cover first 5m:

Time required = $5\text{m} \times 1\text{ min} = 5\text{ min}$ Adding that last 1 min, it takes 6 mins to reach the top of a pole.

Question 2.

Which is greater, the sum of first twenty whole numbers or the product of first twenty whole numbers ?

Solution:

Sum of first 20 whole numbers :

$$0 + 1 + 2 + 3 + 4 + \dots + 19 = 190$$

Product of first 20 whole numbers :

$$0 \times 1 \times 2 \times 3 \times 4 \times \dots \times 19 = 0$$

Hence, sum of first 20 whole numbers is greater than its product.

Question 3.

If a whole number is divisible by 2 and 4, is it divisible by 8 also?

Solution:

May or may not.

Example :

(i) 12, 20, 28 are the whole number which is divided by both 2 and 4, but is not divisible by 8.

(ii) 8, 16, 24 are the whole numbers which are divided by 2, 4 and 8.

Check Your Progress

Question 1.

Write next three consecutive whole numbers of the number 9998.

Solution.

The next three consecutive whole number of 9998 are :

$$9998 + 1 = 9999$$

$$9999 + 1 = 10000$$

$$10000 + 1 = 10001$$

$\therefore$ Numbers are = 9999, 10000, 10001

Question 2.

Write three consecutive whole numbers occurring just before 567890.

Solution.

The three consecutive whole numbers just before 567890 are:

$$567890 - 1 = 567889 - 1 = 567888 - 1$$

$$= 567887$$

$\therefore$ These are : 567889, 567888, 567887

Question 3.

Find the product of the successor and the predecessor of the smallest number of 3-digits.

Solution :

Smallest number of 3-digits = 100

Successor = $100 + 1$

Predecessor = $100 - 1$

$\therefore$ Product = $100 + 1 \times 100 - 1$

$= 101 \times 99 = 9999$

Question 4.

Find the product of the whole numbers between the smallest and the greatest numbers of 2-digits.

Solution :

Smallest number of 2-digits = 10

Greatest number of 2-digits = 99

Numbers between 10 and 99

11, 12,, 98

$= 98 - 10 = 88$

Question 5.

Find the following sum by suitable arrangements :

(i) $678 + 1319 + 322 + 5681$

(ii) $777 + 546 + 1463 + 223 + 537$

Solution:

(i) $678 + 1319 + 322 + 5681$

$$= (678 + 322) + (5681 + 1319)$$

$$= 1000 + 7000 = 8000$$

(ii) $777 + 546 + 1463 + 223 + 537$

$$= (777 + 223) + (1463 + 537) + 546$$

$$= 1000 + 2000 + 546 = 3546$$

Question 6.

Determine the following products by suitable arrangements :

(i) $625 \times 437 \times 16$

(ii) $309 \times 25 \times 7 \times 8$

Solution:

(i) $625 \times 437 \times 16$

$$= 437 \times (625 \times 16)$$

$$= 437 \times 10000 = 4370000$$

$$\begin{aligned}
 & \text{(ii) } 309 \times 25 \times 7 \times 8 \\
 &= (309 \times 7) \times (25 \times 8) \\
 &= 2163 \times 200 = 432600
 \end{aligned}$$

Question 7.

Find the value of the following by using suitable properties :

$$\text{(i) } 236 \times 414 + 236 \times 563 + 236 \times 23$$

$$\text{(ii) } 370 \times 1587 - 37 \times 10 \times 587$$

Solution:

$$\begin{aligned}
 & \text{(i) } 236 \times 414 + 236 \times 563 + 236 \times 23 \\
 &= 236 \times (414 + 563 + 23) \\
 &= 236 \times (1000) = 236000
 \end{aligned}$$

$$\begin{aligned}
 & \text{(ii) } 370 \times 1587 - 37 \times 10 \times 587 \\
 &= 37 \times 10 (1587 - 587) \\
 &= 370 \times 1000 = 370000
 \end{aligned}$$

Question 8.

Divide 6528 by 29 and check the result by division algorithm.

Solution :

$$6528 \div 29$$

$$\begin{array}{r}
 225 \\
 \hline
 29 \overline{) 6528} \\
 \underline{58} \\
 72 \\
 \underline{- 58} \\
 148 \\
 \underline{- 145} \\
 3
 \end{array}$$

$\therefore$ Quotient = 225

and Remainder = 3

Question 9.

Find the greatest 4-digit number which is exactly divisible by 357.

Solution:

Largest 4 digit number is 9999

$$\begin{array}{r}
 28 \\
 \hline
 357 \overline{) 9999} \\
 \underline{714} \\
 2859 \\
 \underline{- 2856} \\
 3
 \end{array}$$

Dividing 9999 by 357, we get

Remainder = 3

Subtracting 3 from 9999, $9999 - 3 = 9996$,

we get the required number divisible by 357.

So 9996

Question 10.

Find the smallest 5-digit number which is exactly divisible by 279.

Solution:

Smallest 5-digit number is 10000

$$\begin{array}{r} 35 \\ \hline 279 \overline{) 10000} \\ \underline{837} \\ 1630 \\ \underline{- 1395} \\ 235 \end{array}$$

Dividing it by 279, we get remainder = 235

To make the smallest 5-digit number exactly divisible by 279, we have to add $279 - 235 = 44$ in 10000

$$\therefore 10000 + 44 = 10044.$$