Chapter 2: Whole Numbers
Exercise 2.1

Question 1:
Write the next three natural numbers after 10999.

Answer 1:
10,999 + 1 = 11,000
11,000 + 1 = 11,001
11,001 + 1 = 11,002

Question 2:
Write the three whole numbers occurring just before 10001.

Answer 2:
10,001 – 1 = 10,000
10,000 – 1 = 9,999
9,999 – 1 = 9,998

Question 3:
Which is the smallest whole number?

Answer 3:
‘0’ (zero) is the smallest whole number.

Question 4:
How many whole numbers are there between 32 and 53?

Answer 4:

53 – 32 – 1 = 20
There are 20 whole numbers between 32 and 53.

Question 5:
Write the successor of:

a) 2440701
b) 100199
c) 1099999
d) 2345670

Answer 5:

a) Successor of 2440701 is 2440701 + 1 = 2440702
b) Successor of 100199 is 100199 + 1 = 100200
c) Successor of 1099999 is 1099999 + 1 = 1100000
d) Successor of 2345670 is 2345670 + 1 = 2345671

Question 6:

Write the predecessor of:

a) 94
b) 10000
c) 208090
d) 7654321

Answer 6:

a) The predecessor of 94 is 94 – 1 = 93
b) The predecessor of 10000 is 10000 – 1 = 9999
c) The predecessor of 208090 is 208090 – 1 = 208089
d) The predecessor of 7654321 is 7654321 – 1 = 7654320

Question 7:

In each of the following pairs of numbers, state which whole number is on the left of the other number on the number line. Also write them with the appropriate sign (>, <) between them.

a) 530, 503
b) 370, 307
c) 98765, 56789
d) 9830415, 10023001

Answer 7:

a) 530 > 503; So 503 appear on left side of 530 on number line.
b) 370 > 307; So 307 appear on left side of 370 on number line.
c) 98765 > 56789; So 56789 appear on left side of 98765 on number line.
d) 9830415 < 10023001; So 9830415 appear on left side of 10023001 on number line.

Question 8:

Which of the following statements are true (T) and which are false (F):

a) Zero is the smallest natural number.
b) 400 is the predecessor of 399.
c) Zero is the smallest whole number.
d) 600 is the successor of 599.
e) All natural numbers are whole numbers.
f) All whole numbers are natural numbers.
g) The predecessor of a two digit number is never a single digit number.
h) 1 is the smallest whole number.
i) The natural number 1 has no predecessor.
j) The whole number 1 has no predecessor.
k) The whole number 13 lies between 11 and 12.
l) The whole number 0 has no predecessor.
m) The successor of a two digit number is always a two digit number

Answer 8:

a) False
b) False
c) True
d) True
e) True
f) False
g) False
h) False
i) True
j) False
k) False
l) True
m) False

Exercise 2.2

Question 1:

Find the sum by suitable rearrangement:

a) 837 + 208 + 363
b) 1962 + 453 + 1538 + 647

Answer 1:

a) 837 + 208 + 363
= (837 + 363) + 208
= 1200 + 208
= 1408

b) 1962 + 453 + 1538 + 647
= (1962 + 1538) + (453 + 647)
= 3500 + 1100
= 4600

Question 2:

Find the product by suitable arrangement:

a) 2 x 1768 x 50
b) 4 x 166 x 25
c) 8 x 291 x 125
d) 625 x 279 x 16
e) 285 x 5 x 60
f) 125 x 40 x 8 x 25

Answer 2:

a) 2 x 1768 x 50
= (2 x 50) x 1768
= 100 x 1768
= 176800

b) 4 x 166 x 25
= (4 x 25) x 166
= 100 x 166
= 16600

c) 8 x 291 x 125
= (8 x 125) x 291
= 1000 x 291
= 291000

d) 625 x 279 x 16
= (625 x 16) x 279
= 10000 x 279
= 2790000

e) 285 x 5 x 60
= 284 x (5 x 60)
= 284 x 300
= 85500

f) 125 x 40 x 8 x 25
= (125 x 8) x (40 x 25)
= 1000 x 1000
= 1000000

Question 3:

Find the value of the following:

a) 297 x 17 + 297 x 3
b) 54279 x 92 + 8 x 54279
c) 81265 x 169 – 81265 x 69
d) 3845 x 5 x 782 + 769 x 25 x 218

Answer 3:

a) 297 x 17 + 297 x 3
= 297 x (17 + 3)
= 297 x 20
= 5940

b) 54279 x 92 + 8 x 542379
= 54279 x (92 + 8)
= 54279 x 100
= 5427900

c) 81265 x 169 – 81265 x 69
= 81265 x (169 – 69)
= 81265 x 100
= 8126500

d) 3845 x 5 x 782 + 769 x 25 x 218
= 3845 x 5 x 782 + 769 x 5 x 5 x 218)
= 3845 x 5 x 782 + 3845 x 5 x 218
= 3845 x 5 x (782 + 218)
= 3845 x 5 x 1000
= 19225000

Question 4:

Find the product using suitable properties:

a) 738 x 103
b) 854 x 102
c) 258 x 1008
d) 1005 x 168

Answer 4:

a) 738 x 103
= 738 x (100 + 3)
= 738 x 100 + 738 x 3
= 73800 + 2214
= 76014

b) 854 x 102
= 854 x (100 + 2)
= 854 x 100 + 854 x 2
= 85400 + 1708
= 87108

c) 258 x 1008
= 258 x (1000 + 8)
= 258 x 1000 + 258 x 8
= 258000 + 2064
= 260064

d) 1005 x 168
= (1000 + 5) x 168
= 1000 x 168 + 5 x 1686
= 168000 + 840
= 168840

Question 5:

A taxi-driver, filled his car petrol tank with 40 liters of petrol on Monday. The next day, he filled the tank with 50 liters of petrol. If the petrol costs ₹44 per liter, how much did he spend in all on petrol?

Answer 5:

Petrol filled on Monday = 40 liters
Petrol filled on next day = 50 liters
Total petrol filled = 90 liters
Now, Cost of 1 liter petrol = ₹44
Cost of 90 liters petrol = 44 x 90
= 44 x (100 – 10)
= 44 x 100 – 44 x 10
= 4400 – 440

= ₹3960

Therefore, he spent ₹3960 on petrol.

Question 6:

A vendor supplies 32 liters of milk to a hotel in a morning and 68 liters of milk in the evening. If the milk costs ₹15 per liter, how much money is due to the vendor per day?

Answer 6:

Supply of milk in morning = 32 liters
Supply of milk in evening = 68 liters
Total supply = 32 + 68 = 100 liters
Now, Cost of 1 liter milk = ₹15
Cost of 100 liters milk = 15 x 100 = ₹1500
Therefore, ₹1500 is due to the vendor per day.

Question 7:

Match the following:

i.	425 x 136 = 425 x (6 + 30 + 100)	a)	Commutativity under multiplication
ii.	2 x 48 x 50 = 2 x 50 x 49	b)	Commutativity under addition
iii.	80 + 2005 + 20 = 80 + 20 + 2005	c)	Distributivity multiplication under addition

Answer 7:

i.	425 x 136 = 425 x (6 + 30 + 100)	c)	Distributivity of multiplication over addition
ii.	2 x 49 x 50 = 2 x 50 x 49	a)	Commutivity under multiplication
iii.	80 + 2005 + 20 = 80 + 20 + 2005	b)	Commutivity under addition

Exercise 2.3

Question 1:

Which of the following will not represent zero:

a) 1 + 0
b) 0 x 0
c) $\frac{0}{2}$
d) $\frac{10-10}{2}$

Answer 1:

(a) [1 + 0 is equal to 1]

Question 2:

If the product of two whole numbers is zero, can we say that one or both of them will be zero? Justify through examples.

Answer 2:

Yes, if we multiply any number with zero the resultant product will be zero.
Example: 2 x 0 = 0, 5 x 0 = 0, 9 x 0 = 0
If both numbers are zero, then the result will also be zero.
0 x 0 = 0

Question 3:

If the product of two whole number is 1, can we say that one or both of them will be 1? Justify through examples.

Answer 3:

If only one number is 1 then the product cannot be 1.
Examples: 5 x 1 = 5, 4 x 1 = 4, 8 x 1 = 8
If both number are 1, then the product will be 1
1 x 1 = 1

Question 4:

Find using distributive property:

a) 728 x 101
b) 5437 x 1001
c) 824 x 25
d) 4275 x 125
e) 504 x 35

Answer 4:

a) 728 x 101
= 728 x (100 + 1)
= 728 x 100 + 728 x 1
= 72800 + 728
= 73528

b) 5437 x 1001
= 5437 x (1000 + 1)
= 5437 x 1000 + 5437 x 1
= 5437000 + 5437
= 5442437

c) 824 x 25
= 824 x (20 + 5)
= 824 x 20 + 824 x 5
= 16480 + 4120
= 20600

d) 4275 x 125
= 4275 x (100 + 20 + 5)
= 4275 x 100 + 4275 x 20 + 4275 x 5
= 427500 + 85500 + 21375
= 534375

e) 504 x 35
= (500 + 4) x 35
= 500 x 35 + 4 x 35
= 17500 + 140
= 17640

Question 5:

Study the pattern:

1 x 8 + 1 = 9;

12 x 8 + 2 = 98;

123 x 8 + 3 = 987;

1234 x 8 + 4 = 9876;

12345 x 8 + 5 = 98765

Write the next two steps. Can you say how the pattern works?

Answer 5:

123456 x 8 + 6 = 987654

1234567 x 8 + 7 = 9876543

Pattern works like this:

1 x 8 + 1 = 9

12 x 8 + 2 = 98

123 x 8 + 3 = 987

1234 x 8 + 4 = 9876

12345 x 8 + 5 = 98765

123456 x 8 + 6 = 987654

1234567 x 8 + 7 = 9875643