

Mathematics

Day: Wednesday
Date: 13th April, 2020

Chapter - 2
(Whole numbers)
Class - VI

Introduction of chapter

1. Natural Numbers: the numbers 1, 2, 3, 4, ... which we use for counting are known as natural numbers
2. Whole Numbers:
The natural numbers along with zero are whole numbers
for eg. : 0, 1, 2, 3, ...

Properties of Whole numbers:

1. Closure property:
Whole numbers are closed under addition and multiplication.

for eg. :
(i) $2 + 6 = 8$ is also a whole number
(ii) $2 \times 6 = 12$ is also a whole number.

2. Commutative property (A)
Addition and multiplication are hold commutative property

for eg. :
(i) $6 + 4 = 4 + 6 = 10$
(ii) $6 \times 4 = 4 \times 6 = 24$

(B) Subtraction is not hold commutative property for whole numbers

$$\text{For eg: } 3-2 \neq 2-3 \\ 1 \neq -1$$

Day: Friday

Date: 18th April, 2020

Chapter-2

3. i) Associative property:

for any three whole numbers
a, b and c

$$\Rightarrow a+(b+c) = (a+b)+c \quad [\text{For addition}]$$

ii) For Multiplication:

$$a \times (b \times c) = (a \times b) \times c$$

4 Distributive property:

for any three numbers
a, b and c

$$\Rightarrow a \times [b+c] = a \times b + a \times c$$

for eg: 3, 4 and 5 are numbers

$$\Rightarrow 3 \times [4+5] = 3 \times 4 + 3 \times 5$$

$$= 12 + 15$$

$$= 27$$

5 Division by zero is not defined.

For eg. : i) $4 \div 0 = \text{not defined}$
 $0 \div 4 = 0$

Successor Number:

If we add 1 to ~~the~~ a natural number, we get its successor number.

For eg. : 99 and its successor is $99 + 1 = 100$

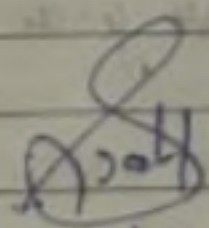
Predecessor Number:

If we subtract 1 from a natural number, we get its predecessor number.

For eg. =

99 and its predecessor is $99 - 1 = 98$

Hint: Do these questions in fair notebook.



18/04/2022

Mathematics

(Chapter – 2) (Whole Numbers)
(Class – VI)

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.

Exercise 2.2

Question 1:

Find the sum by suitable rearrangement:

(a) $837 + 208 + 363$

(b) $1962 + 453 + 1538 + 647$

Answer 1:

$$\begin{aligned} \text{(a)} \quad & 837 + 208 + 363 \\ & = (837 + 363) + 208 \\ & = 1200 + 208 \\ & = 1408 \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & 1962 + 453 + 1538 + 647 \\ & = (1962 + 1538) + (453 + 647) \\ & = 3500 + 1100 \\ & = 4600 \end{aligned}$$

Question 2:

Find the product by suitable arrangement:

(a) $2 \times 1768 \times 50$

(c) $8 \times 291 \times 125$

(e) $285 \times 5 \times 60$

(b) $4 \times 166 \times 25$

(d) $625 \times 279 \times 16$

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

Answer 2:

$$\begin{aligned} \text{(a)} \quad & 2 \times 1768 \times 50 \\ & = (2 \times 50) \times 1768 \\ & = 100 \times 1768 \\ & = 176800 \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & 8 \times 291 \times 125 \\ & = (8 \times 125) \times 291 \\ & = 1000 \times 291 \\ & = 291000 \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad & 285 \times 5 \times 60 \\ & = 284 \times (5 \times 60) \\ & = 284 \times 300 \\ & = 85500 \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad & 4 \times 166 \times 25 \\ & = (4 \times 25) \times 166 \\ & = 100 \times 166 \\ & = 16600 \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad & 625 \times 279 \times 16 \\ & = (625 \times 16) \times 279 \\ & = 10000 \times 279 \\ & = 2790000 \end{aligned}$$

$$\begin{aligned} \text{(f)} \quad & 125 \times 40 \times 8 \times 25 \\ & = (125 \times 8) \times (40 \times 25) \\ & = 1000 \times 1000 \\ & = 1000000 \end{aligned}$$



Question 3:

Find the value of the following:

- (a) $297 \times 17 + 297 \times 3$
- (b) $54279 \times 92 + 8 \times 54279$
- (c) $81265 \times 169 - 81265 \times 69$
- (d) $3845 \times 5 \times 782 + 769 \times 25 \times 218$

Answer 3:

- | | |
|--|--|
| (a) $297 \times 17 + 297 \times 3$
$= 297 \times (17 + 3)$
$= 297 \times 20$
$= 5940$ | (b) $54279 \times 92 + 8 \times 542379$
$= 54279 \times (92 + 8)$
$= 54279 \times 100$
$= 5427900$ |
| (c) $81265 \times 169 - 81265 \times 69$
$= 81265 \times (169 - 69)$
$= 81265 \times 100$
$= 8126500$ | (d) $3845 \times 5 \times 782 + 769 \times 25 \times 218$
$= 3845 \times 5 \times 782 + 769 \times 5 \times 5 \times 218$
$= 3845 \times 5 \times 782 + 3845 \times 5 \times 218$
$= 3845 \times 5 \times (782 + 218)$
$= 3845 \times 5 \times 1000$
$= 19225000$ |

Question 4:

Find the product using suitable properties:

- | | |
|-----------------------|-----------------------|
| (a) 738×103 | (b) 854×102 |
| (c) 258×1008 | (d) 1005×168 |

Answer 4:

- | | |
|---|--|
| (a) 738×103
$= 738 \times (100 + 3)$
$= 738 \times 100 + 738 \times 3$
$= 73800 + 2214$
$= 76014$ | (b) 854×102
$= 854 \times (100 + 2)$
$= 854 \times 100 + 854 \times 2$
$= 85400 + 1708$
$= 87108$ |
| (c) 258×1008
$= 258 \times (1000 + 8)$
$= 258 \times 1000 + 258 \times 8$
$= 258000 + 2064$
$= 260064$ | (d) 1005×168
$= (1000 + 5) \times 168$
$= 1000 \times 168 + 5 \times 168$
$= 168000 + 840$
$= 168840$ |

Question 5:

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

Answer 5:

Petrol filled on Monday = 40 litres

Petrol filled on next day = 50 litres

Total petrol filled = 90 litres

Now,

Cost of 1 litre petrol = ₹ 44

$$\begin{aligned}\text{Cost of 90 litres petrol} &= 44 \times 90 \\ &= 44 \times (100 - 10) \\ &= 44 \times 100 - 44 \times 10 \\ &= 4400 - 440 \\ &= ₹ 3960\end{aligned}$$

Therefore, he spent ₹ 3960 on petrol.

Question 6:

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

Answer 6:

Supply of milk in morning = 32 litres

Supply of milk in evening = 68 litres

Total supply = $32 + 68 = 100$ litres

Now

Cost of 1 litre milk = ₹15

Cost of 100 litres milk = $15 \times 100 = ₹1500$

Therefore, ₹1500 is due to the vendor per day.

Question 7:

Match the following:

- | | |
|--|--|
| (i) $425 \times 136 = 425 \times (6 + 30 + 100)$ | (a) Commutativity under multiplication |
| (ii) $2 \times 48 \times 50 = 2 \times 50 \times 49$ | (b) Commutativity under addition |
| (iii) $80 + 2005 + 20 = 80 + 20 + 2005$ | (c) Distributivity multiplication under addition |

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 2.3

Question 1:

Which of the following will not represent zero:

(a) $1 + 0$

(b) 0×0

(c) $\frac{0}{2}$

(d) $\frac{10-10}{2}$

Answer 1:

(a) $[1 + 0 \text{ is equal to } 1]$

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: $2 \times 0 = 0, 5 \times 0 = 0, 9 \times 0 = 0$

If both numbers are zero, then the result also be zero.

$$0 \times 0 = 0$$

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 be 1 then the product cannot be 1.

Examples: $5 \times 1 = 5, 4 \times 1 = 4, 8 \times 1 = 8$

If both number are 1, then the product is 1

$$1 \times 1 = 1$$

Question 4:

Find using distributive property:

(a) 728×101

(b) 5437×1001

(c) 824×25

(d) 4275×125

(e) 504×35



Answer 4:

$$\begin{aligned} \text{(a) } 728 \times 101 &= 728 \times (100 + 1) \\ &= 728 \times 100 + 728 \times 1 \\ &= 72800 + 728 \\ &= 73528 \end{aligned}$$

$$\begin{aligned} \text{(b) } 5437 \times 1001 &= 5437 \times (1000 + 1) \\ &= 5437 \times 1000 + 5437 \times 1 \\ &= 5437000 + 5437 \\ &= 5442437 \end{aligned}$$

$$\begin{aligned} \text{(c) } 824 \times 25 &= 824 \times (20 + 5) \\ &= 824 \times 20 + 824 \times 5 \\ &= 16480 + 4120 \\ &= 20600 \end{aligned}$$

$$\begin{aligned} \text{(d) } 4275 \times 125 &= 4275 \times (100 + 20 + 5) \\ &= 4275 \times 100 + 4275 \times 20 + 4275 \times 5 \\ &= 427500 + 85500 + 21375 \\ &= 534375 \end{aligned}$$

$$\begin{aligned} \text{(e) } 504 \times 35 &= (500 + 4) \times 35 \\ &= 500 \times 35 + 4 \times 35 \\ &= 17500 + 140 \\ &= 17640 \end{aligned}$$

Question 5:

Study the pattern:

$$1 \times 8 + 1 = 9;$$

$$1234 \times 8 + 4 = 9876;$$

$$12 \times 8 + 2 = 98;$$

$$12345 \times 8 + 5 = 98765$$

$$123 \times 8 + 3 = 987$$

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

Answer 5:

$$123456 \times 8 + 6 = 987654$$

$$1234567 \times 8 + 7 = 9876543$$

Pattern works like this:

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

$$12 \times 8 + 2 = 98$$

$$123 \times 8 + 3 = 987$$

$$1234 \times 8 + 4 = 9876$$

$$12345 \times 8 + 5 = 98765$$

$$123456 \times 8 + 6 = 987654$$

$$1234567 \times 8 + 7 = 9876543$$