



ST. MARY'S CO-ED SCHOOL, HARDA

[2020-21]

CLASS- VI

SUBJECT- MATHS

CHAPTER- 3

WHOLE NUMBERS.

GLIMPSE OF THE CHAPTER

*Natural numbers: Counting numbers are called natural numbers, 1, 2, 3, etc.

*Whole numbers : All natural numbers together with '0' are called whole numbers.

Thus 0, 1, 2, 3, 4..... are whole numbers.

*successor of a whole number: If we add 1 to a whole number, we get next whole number, called successor.

*Predecessor of a whole number: One less than a given whole number (other than 0) is called its predecessor.

- Properties of addition
 - (i) Closure property: if a and b are any two whole numbers, $(a + b)$ is also a whole number.
 - (ii) Commutative Law: If a and b are any two whole numbers, then
$$(a + b) = (b + a)$$
 - (iii) Additive property of Zero : If a is any whole number, then
$$a + 0 = 0 + a = a$$
 - (iv) Associative Law: For any whole numbers a, b, c we always have
$$(a + b) + c = a + (b + c)$$

NOTE:

- 1) The questions which have not been included in the PDF are to be done as Home work.
- 2) The Homework needs to be completed in your respective Mathematics notebook.

EXERCISE - 3A

1. Write the next three whole numbers after 30999.

31000, 31001 and 31002 are the next three whole numbers after 30999

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

To find three whole numbers just occurring before 10001. Subtract 1 from each number

$$10001 - 1 = 10000$$

$$10000 - 1 = 9999$$

$$9999 - 1 = 9998$$

Hence 10000, 9999 and 9998 are the numbers occurring just before 10001

3. How many whole numbers are there between 1032 and 1209?

To find the whole numbers between 1032 and 1209

$$(1209 - 1032) - 1 = 177 - 1$$

$$= 176$$

Hence 176 is the whole number between 1032 and 1209

4. Which is the smallest whole number?

Since all natural numbers considering 0 are whole numbers

Hence 0 is the smallest whole number.

5. Write the successor of :

i) 2540801

$$\text{Ans. } 2540801 + 1 = 2540802$$

ii) 9999

$$\text{Ans. } 9999 + 1 = 10,000$$

iii) 50904

$$\text{Ans. } 50904 + 1 = 50905$$

EXERCISE – 3 B

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

(i) $458 + 639 = 639 + \dots$

(ii) $864 + 2006 = 2006 + \dots$

(iii) $1946 + \dots = 984 + 1946$

(iv) $8063 + 0 = \dots$

(v) $53501 + (574 + 799) = 574 + (53501 + \dots)$

Solutions

(i) $458 + 639 = 639 + 458$

(ii) $864 + 2006 = 2006 + 864$

(iii) $1946 + 984 = 984 + 1946$

(iv) $8063 + 0 = 8063$

(v) $53501 + (574 + 799) = 574 + (53501 + 799)$

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

(i) $16509 + 114$

(ii) $2359 + 548$

(iii) $19753 + 2867$

Solution

(i) $16509 + 114$

$16509 + 114 = 16623$

Reversing the order of the addends, we get

$114 + 16509 = 16623$

$\therefore 16509 + 114 = 114 + 16509$

(ii) $2359 + 548$

$2359 + 548 = 2907$

Reversing the order of the addends, we get

$548 + 2359 = 2907$

$\therefore 2359 + 548 = 548 + 2359$

(iii) $19753 + 2867$

$$19753 + 2867 = 22620$$

Reversing the order of the addends

$$2867 + 19753 = 22620$$

$$\therefore 19753 + 2867 = 2867 + 19753$$

3. Find the sum: $(1546 + 498) + 3589$

Also, find the sum: $1546 + (498 + 3589)$. Are the two sums equal? State the property satisfied.

$$(1546 + 498) + 3589 = 2044 + 3589$$

$$= 5633$$

$$1546 + (498 + 3589) = 1546 + 4087$$

$$= 5633$$

Yes, the two sums are equal

Hence associative property of addition is satisfied

4. Determine each of the sums given below using suitable rearrangement.

(i) $953 + 707 + 647$

(ii) $1983 + 647 + 217 + 353$

(iii) $15409 + 278 + 691 + 422$

(iv) $3259 + 10001 + 2641 + 9999$

(v) $1 + 2 + 3 + 4 + 96 + 97 + 98 + 99$

(vi) $2 + 3 + 4 + 5 + 45 + 46 + 47 + 48$

Solution

(i) $953 + 707 + 647$

Using associative property of addition

$$953 + (707 + 647) = 953 + 1354 = 2307$$

(ii) $1983 + 647 + 217 + 353$

Using associative property of addition

$$(1983 + 647) + (217 + 353) = 2630 + 570 = 3200$$

(iii) $15409 + 278 + 691 + 422$

Using associative property of addition

$$(15409 + 278) + (691 + 422) = 15687 + 1113$$

$$= 16800$$

(iv) $3259 + 10001 + 2641 + 9999$

Using associative property of addition

$$(3259 + 10001) + (2641 + 9999) = 13260 + 12640$$

$$= 25900$$

(v) $1 + 2 + 3 + 4 + 96 + 97 + 98 + 99$

Using associative property of addition

$$(1 + 2 + 3 + 4) + (96 + 97 + 98 + 99) = 10 + 390$$

$$= 400$$

(vi) $2 + 3 + 4 + 5 + 45 + 46 + 47 + 48$

Using associative property of addition

$$(2 + 3 + 4 + 5) + (45 + 46 + 47 + 48) = 14 + 186$$

$$= 200$$

EXERCISE - 3 C

1. Perform the following subtractions. Check your results by the corresponding additions.

(i) $6237 - 694$

(ii) $21205 - 10899$

(iii) $100000 - 78987$

(iv) $1010101 - 656565$

Solution

(i) Subtraction of $6237 - 694 = 5543$

Addition:

$$5543 + 694 = 6237$$

(ii) Subtraction of $21205 - 10899 = 10306$

Addition: $10306 + 10899 = 21205$

(iii) Subtraction of $100000 - 78987 = 21013$

Addition:

$$21013 + 78987 = 100000$$

(iv) Subtraction of $1010101 - 656565 = 353536$

Addition:

$$353536 + 656565 = 1010101$$

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

(i)

$$\begin{array}{r} 917 \\ - *5* \\ \hline \end{array}$$

$$\boxed{5*8}$$

(ii)

$$\begin{array}{r} 6172 \\ - **69 \\ \hline \end{array}$$

$$\boxed{29**}$$

(iii)

$$\begin{array}{r} 5001003 \\ - **6987 \\ \hline \end{array}$$

$$\boxed{484****}$$

(iv)

$$\begin{array}{r} 1000000 \\ - *****1 \\ \hline \end{array}$$

$$\boxed{*7042*}$$

Solutions

(i) $917 - 359 = 558$

(ii) $6172 - 3269 = 2903$

(iii) $5001003 - 156987 = 4844016$

(iv) $1000000 - 29571 = 970429$

3. Find the difference :

(i) $463 - 9$

(ii) $5632 - 99$

(iii) $8640 - 999$

(iv) $13006 - 9999$

Solutions

(i) $463 - 9$

It can be written as $463 - 10 + 1$

$$= 464 - 10$$

$$= 454$$

(ii) $5632 - 99$

It can be written as $5632 - 100 + 1$

$$= 5633 - 100$$

$$= 5533$$

(iii) $8640 - 999$

It can be written as $8640 - 1000 + 1$

$$= 8641 - 1000$$

$$= 7641$$

(iv) $13006 - 9999$

It can be written as $= 13006 - 10000 + 1$

$$= 13007 - 10000$$

$$= 3007$$

4. Find the difference between the smallest number of 7 digits and the largest number of 4 digits

The smallest 7 digit number is 1000000

The largest 4 digit number is 9999

To find their difference $= 1000000 - 9999$

$$= 1000000 - 10000 + 1$$

$$= 1000001 - 10000$$

$$= 990001$$

$\therefore$ The difference between the smallest number of 7 digits and the largest number of 4 digits

$$= 990001$$

5. Ravi opened his account in a bank by depositing Rs. 136000. Next day he withdrew Rs. 73129 from it. How much money was left in his account ?

Ans. Amount deposited in the bank = Rs. 136000

Amount withdrawn next day = Rs. 73129

Money left in his account = Rs. 136000 - Rs. 73129
= Rs. 62871

Thus , Rs. 62871 is left in his account.

EXERCISE - 3D

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

(i) $246 \times 1 = \dots\dots\dots$

(ii) $1369 \times 0 = \dots\dots\dots$

(iii) $593 \times 188 = 188 \times \dots\dots\dots$

(iv) $286 \times 753 = \dots\dots\dots \times 286$

(v) $38 \times (91 \times 37) = \dots\dots\dots \times (38 \times 37)$

(vi) $13 \times 100 \times \dots\dots\dots = 1300000$

(vii) $59 \times 66 + 59 \times 34 = 59 \times (\dots\dots\dots + \dots\dots\dots)$

(viii) $68 \times 95 = 68 \times 100 - 68 \times \dots\dots\dots$

Solution

The true statements are

(i) $246 \times 1 = 246$

(ii) $13690 \times 0 = 0$

(iii) $593 \times 188 = 188 \times 593$

(iv) $286 \times 753 = 753 \times 286$

(v) $38 \times (91 \times 37) = 91 \times (38 \times 37)$

(vi) $13 \times 100 \times 1000 = 1300000$

(vii) $59 \times 66 + 59 \times 34 = 59 \times (66 + 34)$

(viii) $68 \times 95 = 68 \times 100 - 68 \times 5$

2. State the property used in each of the following Statements:

(i) $19 \times 17 = 17 \times 19$

(ii) (16×32) is a whole number

(iii) $(29 \times 36) \times 18 = 29 \times (36 \times 18)$

(iv) $1480 \times 1 = 1480$

(v) $1732 \times 0 = 0$

(vi) $72 \times 98 + 72 \times 2 = 72 \times (98 + 2)$

(vii) $63 \times 126 - 63 \times 26 = 63 \times (126 - 26)$

Solutions

(i) $19 \times 17 = 17 \times 19$

⇒ Commutative law of multiplication is used

(ii) (16×32) is a whole number

⇒ closure property is used

(iii) $(29 \times 36) \times 18 = 29 \times (36 \times 18)$

⇒ Associative of multiplication property is used

(iv) $1480 \times 1 = 1480$

⇒ Multiplicative identity is used

(v) $1732 \Rightarrow 0 = 0$

⇒ Zero property is used

(vi) $72 \times 98 + 72 \times 2 = 72 \times (98 + 2)$

⇒ Distributive law of multiplication over addition is used

(vii) $63 \times 126 - 63 \times 26 = 63 \times (126 - 26)$

⇒ Distributive law of multiplication over subtraction is used

3. Find the value of each of the following using various properties:

(i) $647 \times 13 + 647 \times 7$

(ii) $8759 \times 94 + 8759 \times 6$

(iii) $7459 \times 999 + 7459$

(iv) $9870 \times 561 - 9870 \times 461$

(v) $569 \times 17 + 569 \times 13 + 569 \times 70$

(vi) $16825 \times 16825 - 16825 \times 6825$

Solutions

(i) By using distributive property we get

$$647 \times 13 + 647 \times 7 = 647 \times (13 + 7)$$

$$= 647 \times 20$$

$$= 12940$$

(ii) By using distributive property we get

$$8759 \times 94 + 8759 \times 6 = 8759 \times (94 + 6)$$

$$= 8759 \times 100$$

$$= 875900$$

(iii) By using distributive property we get

$$7459 \times 999 + 7459 = 7459 \times (999 + 1)$$

$$= 7459 \times 1000$$

$$= 7459000$$

(iv) By using distributive property we get

$$9870 \times 561 - 9870 \times 461 = 9870 \times (561 - 461)$$

$$= 9870 \times 100$$

$$= 987000$$

(v) By using distributive property we get

$$569 \times 17 + 569 \times 13 + 569 \times 70 = 569 \times (17 + 13 + 70)$$

$$= 569 \times 100$$

$$= 56900$$

(vi) By using distributive property we get

$$16825 \times 16825 - 16825 \times 6825 = 16825 \times (16825 - 6825)$$

$$= 16825 \times 10000$$

$$= 168250000$$

4. Determine each of the following products by suitable rearrangements:

(i) $2 \times 1658 \times 50$

(ii) $4 \times 927 \times 25$

(iii) $625 \times 20 \times 8 \times 50$

(iv) $574 \times 625 \times 16$

(v) $250 \times 60 \times 50 \times 8$

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

Solutions

(i) It can be written as

$$2 \times 1658 \times 50 = (2 \times 50) \times 1658$$

$$= 100 \times 1658$$

$$= 165800$$

(ii) It can be written as

$$4 \times 927 \times 25 = (4 \times 25) \times 927$$

$$= 100 \times 927$$

$$= 92700$$

(iii) It can be written as

$$625 \times 20 \times 8 \times 50 = (20 \times 50) \times 8 \times 625$$

$$= 1000 \times 8 \times 625$$

$$= 8000 \times 625$$

$$= 5000000$$

(iv) It can be written as

$$574 \times 625 \times 16 = 574 \times (625 \times 16)$$

$$= 574 \times 10000$$

$$= 5740000$$

(v) It can be written as

$$250 \times 60 \times 50 \times 8 = (250 \times 8) \times (60 \times 50)$$

$$= 2000 \times 3000$$

$$= 6000000$$

(vi) It can be written as

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

$$= 1000 \times 1000$$

$$= 1000000$$

5. Find each of the following products, using distributive laws:

(i) 740×105

(ii) 245×1008

(iii) 947×96

(iv) 996×367

(v) 472×1097

(vi) 580×64

(vii) 439×997

(viii) 1553×198

Solutions

(i) Using distributive law of multiplication over addition

We get

$$740 \times 105 = 740 \times (100 + 5)$$

$$= 740 \times 100 + 740 \times 5$$

$$= 74000 + 3700$$

$$= 77700$$

(ii) Using distributive law of multiplication over addition

$$245 \times 1008 = 245 \times (1000 + 8)$$

$$= 245 \times 1000 + 245 \times 8$$

$$= 245000 + 1960$$

$$= 246960$$

(iii) Using distributive law of multiplication over subtraction

We get

$$947 \times 96 = 947 \times (100 - 4)$$

$$= 947 \times 100 - 947 \times 4$$

$$= 94700 - 3788$$

$$= 90912$$

(iv) Using distributive law of multiplication over subtraction

We get

$$\begin{aligned} 996 \times 367 &= 367 \times (1000 - 4) \\ &= 367 \times 1000 - 367 \times 4 \\ &= 367000 - 1468 \\ &= 365532 \end{aligned}$$

(v) Using distributive law of multiplication over addition

We get

$$\begin{aligned} 472 \times 1097 &= 472 \times (1000 + 97) \\ &= 472 \times 1000 + 472 \times 97 \\ &= 472000 + 45784 \\ &= 517784 \end{aligned}$$

(vi) Using distributive law of multiplication over addition

We get

$$\begin{aligned} 580 \times 64 &= 580 \times (60 + 4) \\ &= 580 \times 60 + 580 \times 4 \\ &= 34800 + 2320 \\ &= 37120 \end{aligned}$$

(vii) Using distributive law of multiplication over subtraction

$$\begin{aligned} 439 \times 997 &= 439 \times (1000 - 3) \\ &= 439 \times 1000 - 439 \times 3 \\ &= 439000 - 1317 \\ &= 437683 \end{aligned}$$

(viii) Using distributive law of multiplication over addition

We get

$$\begin{aligned} 1553 \times 198 &= 1553 \times (100 + 98) \\ &= 1553 \times 100 + 1553 \times 98 \\ &= 155300 + 152194 \\ &= 307494 \end{aligned}$$

6. Find each of the following products, using distributive laws:

(i) 3576×9

(ii) 847×99

(iii) 2437×999

Solutions

Distributive law of multiplication over addition = $a(b + c)$

$$= ab + ac$$

Distributive law of multiplication over subtraction = $a(b - c)$

$$= ab - ac$$

(i) 3576×9 can be written as

$$3576 \times 9 = 3576 \times (10 - 1)$$

$$= 3576 \times 10 - 3576 \times 1$$

$$= 35760 - 3576$$

$$= 32184$$

(ii) 847×99 can be written as

$$847 \times 99 = 847 \times (100 - 1)$$

$$= 847 \times 100 - 847 \times 1$$

$$= 84700 - 847$$

$$= 83853$$

(iii) 2437×999 can be written as

$$2437 \times 999 = 2437 \times (1000 - 1)$$

$$= 2437 \times 1000 - 2437 \times 1$$

$$= 2437000 - 2437 = 2434563$$

8. Find the product of the largest 3 digit number and the largest 5 digit number.

Ans. Largest 3 digit number = 999

Largest 5 digit number = 99999

$$999 \times 99999 = 999 \times (100000 - 1)$$

$$= 999 \times 100000 - 999 \times 1$$

$$= 99900000 - 999 = 99899001$$

9. A car moves at a uniform speed of 75 km per hour. How much distance will it cover in 98 hours ?

Ans. Speed of car = 75 km per hour

Distance moved in 1 hour = 75 km

Distance moved in 98 hours = 75×98 km
= 7350 km

10. A dealer purchased 139 VCRs. If the cost of each set is Rs. 24350, find the cost of all the sets together.

Ans. The cost of 1 set of VCR = Rs. 24350

Therefore, the cost of 139 set's of VCR = $\text{Rs. } 24350 \times 139$
= Rs. 3384650

EXERCISE – 3 E

1. Divide and check your answer by the corresponding multiplication in each of the following:

(i) $1936 \div 16$

(ii) $19881 \div 47$

(iii) $257796 \div 341$

SOLUTIONS

(i)

		0	1	2	1
1	6	1	9	3	6
-	0				
		1	9		
-	1	6			
		3	3		
	-	3	2		
			1	6	
		-	1	6	
				0	

Here Dividend = 1936

Divisor = 16

Quotient = 121

Remainder = 0

To check divisor $\times$ quotient + remainder = dividend

$$16 \times 121 + 0 = 1936$$

$$16 \times 121 = 1936$$

(ii) $19881 \div 47$

			0	0	4	2	3
4	7	1	9	8	8	1	
-	0						
		1	9				
-		0					
		1	9	8			
-		1	8	8			
			1	0	8		
		-		9	4		
				1	4	1	
			-	1	4	1	
						0	

Here Dividend = 19881

Divisor = 47

Quotient = 423

Remainder = 0

To Check

Divisor $\times$ quotient + remainder = dividend

$$47 \times 423 + 0 = 19881$$

$$47 \times 423 = 19881$$

(iii)

				0	0	0	7	5	6
3	4	1		2	5	7	7	9	6
		-		0					
				2	5				
		-		0					
				2	5	7			
		-			0				
				2	5	7	7		
		-		2	3	8	7		
				1	9	0	9		
		-		1	7	0	5		
				2	0	4	6		
		-		2	0	4	6		
								0	

Dividend = 257796 Divisor = 341 Quotient = 756 Remainder = 0

To Check

Divisor $\times$ quotient + remainder = dividend

$$341 \times 756 + 0 = 257796$$

$$341 \times 756 = 257796$$

4. Find a whole number n such that $n \div n = n$

Given $n \div n = n$

This shows that $n/n = n$

$$n = n^2$$

Here clearly shows that whole number $n = n^2$

Hence, the whole number is 1

$$\therefore n = 1$$

5. The product of two numbers is 504347. If one of the number is 317, find the other.

Given the product of two numbers = 504347

The other number = 317

Let the two numbers be X and Y

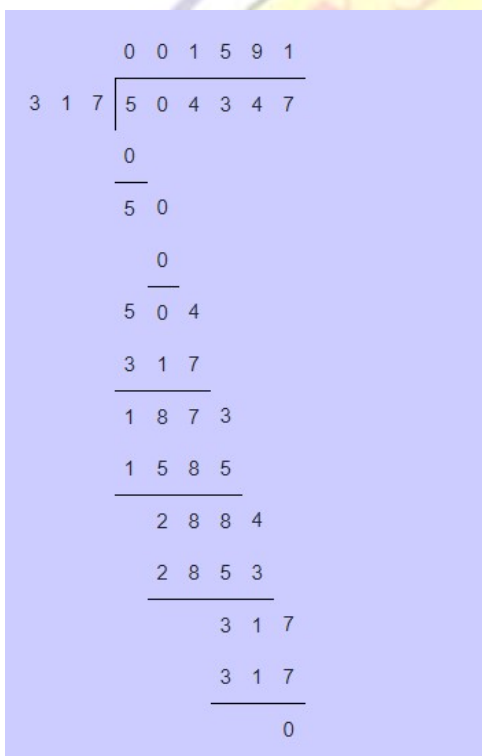
The product of two numbers = $X \times Y$

$$X \times Y = 504347$$

Let $X = 317$

$$317 \times Y = 504347$$

$$Y = 504347 \div 317$$


$$\begin{array}{r} 01591 \\ 317 \overline{) 504347} \\ \underline{0} \\ 50 \\ \underline{0} \\ 504 \\ \underline{317} \\ 1873 \\ \underline{1585} \\ 2884 \\ \underline{2853} \\ 317 \\ \underline{317} \\ 0 \end{array}$$

To check

Divisor $\times$ Quotient + Remainder = Dividend

$$317 \times 1591 + 0 = 504347$$

$$317 \times 1591 = 504347$$

$$504347 = 504347$$

$\therefore$ The other number is 1591

6. On dividing 59761 by a certain number, the quotient is 189 and the remainder is 37. Find the divisor.

Dividend = 59761

Quotient = 189

Remainder = 37

To find the divisor

Divisor $\times$ Quotient + Remainder = Dividend

Dividend = Divisor $\times$ Quotient + Remainder

59761 = Divisor $\times$ 189 + 37

Divisor $\times$ 189 = 59761 - 37

Divisor $\times$ 189 = 59724

Divisor = 59724 / 189

59724 $\div$ 189

			0	0	3	1	6
1	8	9	5	9	7	2	4
		-	0				
			5	9			
		-		0			
			5	9	7		
		-	5	6	7		
			3	0	2		
		-	1	8	9		
			1	1	3	4	
		-	1	1	3	4	
							0

$\therefore$ Divisor = 316

7. On dividing 55390 by 299, the remainder is 75. Find the quotient using the division algorithm.

Dividend = 55390

Divisor = 299

Remainder = 75

To find the Quotient

Dividend = Divisor $\times$ Quotient + Remainder

$55390 = 299 \times \text{Quotient} + 75$

$299 \times \text{Quotient} = 55390 - 75$

$299 \times \text{Quotient} = 55315$

Quotient = $55315 / 299$

$= 55315 \div 299$

			0	0	1	8	5
2	9	9	5	5	3	1	5
		-	0				
			5	5			
		-		0			
			5	5	3		
		-	2	9	9		
			2	5	4	1	
		-	2	3	9	2	
				1	4	9	5
		-		1	4	9	5
							0

$\therefore$ Quotient = 185

THANKS