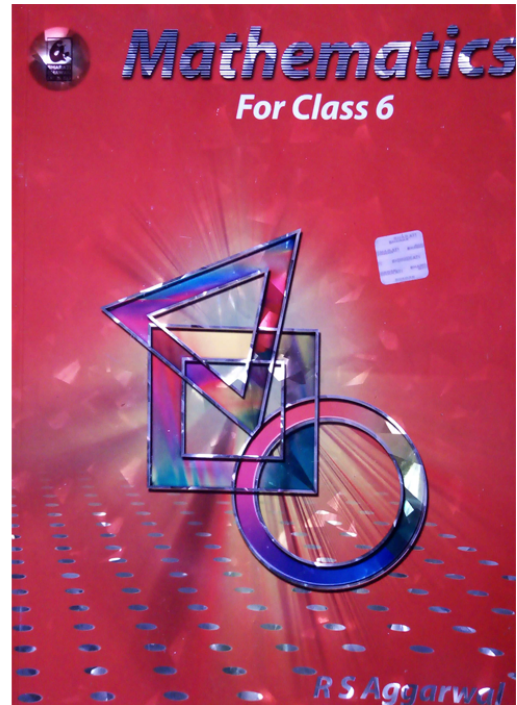


# RS Aggarwal Solutions for Class 6 Maths

## Chapter 3–Whole Numbers

### Class 6 - Chapter 3 Whole Numbers



For any clarifications or questions you can write to [info@indcareer.com](mailto:info@indcareer.com)

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# RS Aggarwal Solutions for Class 6

## Maths Chapter 3–Whole Numbers

Class 6: Maths Chapter 3 solutions. Complete Class 6 Maths Chapter 3 Notes.

### RS Aggarwal Solutions for Class 6 Maths Chapter 3–Whole Numbers

RS Aggarwal 6th Maths Chapter 3, Class 6 Maths Chapter 3 solutions

#### Ex 3A Solutions

##### Question 1.

##### Solution:

After 30999, three whole numbers will be

$$30999 + 1 = 31000$$

$$31000 + 1 = 31001$$

$$31001 + 1 = 31002$$

i.e., 31000, 31001 and 31002

##### Question 2.

##### Solution:

Before 10001, three whole numbers will be  $10001 - 1 = 10000$

$$10000 - 1 = 9999$$

$$9999 - 1 = 9998$$

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i.e., 10000, 9999, 9998

**Question 3.**

**Solution:**

Between 1032 and 1209, whole number are  $1209 - 1031$

$= 178$

**Question 4.**

**Solution:**

The smallest whole number is 0

**Question 5.**

**Solution:**

The successor of

(i) 2540801 is  $2540801 + 1 = 2540802$

(ii) 9999 is  $9999 + 1 = 10000$

(iii) 50904 is  $50904 + 1 = 50905$

(iv) 61639 is  $61639 + 1 = 61640$

(v) 687890 is  $687890 + 1 = 687891$

(vi) 5386700 is  $5386700 + 1 = 5386701$

(vii) 6475999 is  $6475999 + 1 = 6476000$

(viii) 9999999 is  $9999999 + 1 = 10000000$

**Question 6.**

**Solution:**

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Predecessor of

(i) 97 is  $97 - 1 = 96$

(ii) 10000 is  $10000 - 1 = 9999$

(iii) 36900 is  $36900 - 1 = 36899$

(iv) 7684320 is  $7684320 - 1 = 7684319$

(v) 1566391 is  $1566391 - 1 = 1566390$

(vi) 2456800 is  $2456800 - 1 = 2456799$

(vii) 100000 is  $100000 - 1 = 99999$

(viii) 1000000 is  $1000000 - 1 = 999999$

**Question 7.**

**Solution:**

Three consecutive whole numbers just preceding 7510001 are  $(7510001 - 1)$ ,  $(7510001 - 2)$ ,  $(7510001 - 3)$

i.e. 7510000, 7509999, 7509998.

**Question 8.**

**Solution:**

(i) Zero is not a natural number. (F)

(ii) Zero is the smallest whole number (T)

(iii) No, it is false, as zero is not a natural number but it is a whole number.

(iv) Yes, it is true, as set of natural numbers is a subset of whole numbers.

(v) False, zero is the smallest whole number.

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(vi) The natural number 1 has no predecessor as 0 is the predecessor of 1 (T)

Which is not a natural number

(vii) The whole number 1 has no predecessor (F)

Predecessor of 1 is 0 which is a whole number

(viii) The whole number 0 has no predecessor (T)

(ix) The predecessor of a two-digit number is never a single-digit number (F)

As predecessor of two digit number say 99 is  $99 - 1 = 98$

Which is also a two-digit number and of 10 is  $10 - 1 = 9$

which is single-digit number

(x) The successor of a two-digit number is always a two-digit number (F)

The successor of a two-digit number 99 is  $99 + 1 = 100$  which is a three digit number

(xi) 500 is the predecessor of 499 (F)

As predecessor of 499 is  $499 - 1 = 498$  not 500 as 500 is the successor of 499

(xii) 7000 is the successor of 6999 (T)

### Ex 3B Solutions

#### Question 1.

#### Solution:

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

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

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

(iv)  $8063 + 0 = 8063$  (Additive property of zero)

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

### Question 2.

**Solution:**

(i)  $16509 + 114 = 16623$

Check :  $16623 - 114 = 16509$  which is given.

(ii)  $2359 + 548 = 2907$

Check:  $2907 - 2359 = 548$  which is given

(iii)  $19753 + 2867 = 22620$

Check :  $22620 - 19753 = 2867$  which is given

### Question 3.

**Solution:**

$(1546 + 498) + 3589$

$= 2044 + 3589$

$= 5633$

and  $1546 + (498 + 3589)$

$= 1546 + 4087$

$= 5633$

Yes, the above two sum are equal.

The property used is associative law of addition.

### Question 4.

**Solution:**

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(i)  $953 + 707 + 647$

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

(by associative law)

$$= 1600 + 707$$

$$= 2307$$

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

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

$$= 2200 + 1000 = 3200$$

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

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

(by associative law)

$$= 16100 + 700$$

$$= 16800$$

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

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

(by associative law)

$$= 5900 + 20000$$

$$= 25900$$

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

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

$$= (100 + 100) + (100 + 100)$$

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$$= 200 + 200$$

$$= 400$$

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

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

$$= (50 + 50) + (50 + 50)$$

$$= 100 + 100 = 200$$

### Question 5.

#### Solution:

$$(i) 6784 + 9999 = (6784 - 1) + (9999 + 1)$$

(Adding and subtracting 1)

$$= 6783 + 10000$$

$$= 16783$$

$$(ii) 10578 + 99999$$

(Adding and subtracting 1)

$$= (10578 - 1) + (99999 + 1)$$

$$= 10577 + 100000$$

$$= 110577$$

### Question 6.

#### Solution:

Yes it is true, by the property of associative law of addition.

### Question 7.

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**Solution:**

The magic squares given are completed as under:

(i)

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

In each row/column, the sum = 15

(ii)

|    |    |    |
|----|----|----|
| 16 | 2  | 12 |
| 6  | 10 | 14 |
| 8  | 18 | 4  |

In each row/column, the sum = 30

(iii)

|    |    |    |    |
|----|----|----|----|
| 2  | 15 | 16 | 5  |
| 9  | 12 | 11 | 6  |
| 13 | 8  | 7  | 10 |
| 14 | 3  | 4  | 17 |

In each rows/column, the sum = 38

(iv)

|    |    |    |    |
|----|----|----|----|
| 7  | 18 | 17 | 4  |
| 8  | 13 | 14 | 11 |
| 12 | 9  | 10 | 15 |
| 19 | 6  | 5  | 16 |

In each row/column, the sum = 46

**Question 8.**

**Solution:**

(i) The sum of two odd numbers is an odd number (F)

As sum of two odd numbers is always an even number

(ii) The sum of two even number is an even number (T)

(iii) The sum of an even number and an odd number is an odd number (T)

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**Question 1.**

**Solution:**

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(i) 
$$\begin{array}{r} 5113 \\ 6237 \text{ After borrowing} \\ - 694 \\ \hline 5543 \end{array}$$

Check 
$$\begin{array}{r} 11 \\ 5543 \\ + 694 \\ \hline 6237 \end{array}$$

(ii) 
$$\begin{array}{r} 2011915 \\ 21205 \text{ After borrowing} \\ - 10899 \\ \hline 10306 \end{array}$$

Check : 
$$\begin{array}{r} 111 \\ 10306 \\ + 10899 \\ \hline 21205 \end{array}$$

(iii) 
$$\begin{array}{r} 100000 \\ - 78987 \\ \hline 21013 \end{array}$$
 After borrowing

Check : 
$$\begin{array}{r} 21013 \\ + 78987 \\ \hline 100000 \end{array}$$

(iv) 
$$\begin{array}{r} 1010101 \\ - 656565 \\ \hline 353536 \end{array}$$
 After borrowing

Check : 
$$\begin{array}{r} 353536 \\ + 656565 \\ \hline 1010101 \end{array}$$

## Question 2.

Solution:

(i) 
$$\begin{array}{r} 917 \\ - 359 \\ \hline 558 \end{array}$$

(ii) 
$$\begin{array}{r} 6172 \\ - 3269 \\ \hline 2903 \end{array}$$

(iii) 
$$\begin{array}{r} 5001003 \\ - 156987 \\ \hline 4844016 \end{array}$$

(iv) 
$$\begin{array}{r} 1000000 \\ - 29571 \\ \hline 970429 \end{array}$$

## Question 3.

Solution:

(i)  $463 - 9$

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$$= 464 - 1 - 9$$

$$= 464 - 10$$

$$= 454$$

$$(ii) 5632 - 99$$

$$= 5632 - 100 + 1$$

$$= 5633 - 100$$

$$= 5533$$

$$(iii) 8640 - 999$$

$$= 8640 - 1000 + 1$$

$$= 8641 - 1000$$

$$= 7641$$

$$(iv) 13006 - 9999$$

$$= 13006 - 10000 + 1$$

$$= 13007 - 10000$$

$$= 12007$$

#### **Question 4.**

##### **Solution:**

Smallest number of 7-digits = 1000000

Largest number of 4-digits = 9999

Required difference = (1000000 - 9999)

$$= 990001$$

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**Question 5.****Solution:**

Deposit in the beginning = Rs. 136000

Next day withdrew = Rs. 73129

Amount left in the bank account = Rs. 136000 – 73129

= Rs. 62871

**Question 6.****Solution:**

Amount withdrawn from the bank = Rs. 1,00,000

Cost of TV set = Rs. 38750

Cost of refrigerator = Rs. 23890

Cost of jewellery = Rs. 35560

Total amount spent on her purchase = Rs. (38750 + 23890 + 35560)

= Rs. 98200

Amount left with her – Rs. 1,00,000 – Rs. 98200

= Rs. 1800

**Question 7.****Solution:**

Population of a town = 110500

Increase in 1 year = 3608

Persons left or died = 8973

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The population at the end of year =  $110500 + 3608 - 8973$

$$= 114108 - 8973$$

$$= 105135$$

**Question 8.**

**Solution:**

(i) We have  $n + 4 = 9$

$$n = 9 - 4 = 5$$

$$n = 5$$

(ii)  $n + 35 = 101$

Subtracting 35 from both sides

$$n + 35 - 35 = 101 - 35$$

$$\Rightarrow n = 66$$

$$n = 66$$

(iii)  $n - 18 = 39$

Adding 18 to both sides

$$n - 18 + 18 = 39 + 18$$

$$\Rightarrow n = 57$$

$$n = 57$$

(iv)  $n - 20568 = 21403$  Adding 20568 to both sides

$$n - 20568 + 20568 = 21403 + 20568$$

$$n = 41971$$

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## Ex 3D Solutions

### Question 1.

#### Solution:

(i)  $246 \times 1 = 246$

(By multiplicative property of 1)

(ii)  $1369 \times 0 = 0$

(By multiplicative property of 0)

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

(By commutative law of multiplication)

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

(By commutative law of multiplication)

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

(By associative law of multiplication)

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

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

(By distributive law of multiplication)

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

### Question 2.

#### Solution:

(i) Commutative law of multiplication

(ii) Closure property

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(iii) Associative law of multiplication

(iv) Multiplicative property of 1

(v) Multiplicative property of 0

(vi) Distributive law of multiplication over addition in whole numbers

(vii) Distributive law of multiplication over subtraction in whole numbers

**Question 3.**

**Solution:**

Using the law of distribution over addition and subtraction

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

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

$$= 647 \times 20$$

$$= 12940$$

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

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

$$= 8759 \times 100$$

$$= 875900$$

(iii)  $7459 \times 999 + 7459$

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

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

$$= 7459 \times 1000$$

$$= 7459000$$

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

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

$$= 9870 \times 100$$

$$= 987000$$

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

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

$$= 569 \times 100$$

$$= 56900$$

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

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

$$= 16825 \times 10000$$

$$= 168250000$$

**Question 4.**

**Solution:**

(i)  $2 \times 1658 \times 50 = 1658 \times (2 \times 50)$  (Associative law of multiplication)

$$= 1658 \times 100$$

$$= 165800$$

(ii)  $4 \times 927 \times 25 = 927 \times (4 \times 25)$  (Associative law of multiplication)

$$= 927 \times 100$$

$$= 92700$$

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

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(By associative law of multiplication)

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

$$= 5000 \times 1000$$

$$= 5000000$$

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

$$= 574 \times 10000$$

$$= 5740000$$

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

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

(By associative law)

$$= 2000 \times 3000$$

$$= 6000000$$

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

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

$$= 1000 \times 1000$$

$$= 1000000$$

### Question 5.

#### Solution:

Using distributive law of multiplication over addition or subtraction,

$$(i) 740 \times 105$$

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

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

$$= 74000 + 3700$$

$$= 77700$$

$$(ii) 245 \times 1008$$

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

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

$$= 245000 + 1960$$

$$= 246960$$

$$(iii) 947 \times 96$$

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

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

$$= 94700 - 3788$$

$$= 90912$$

$$(iv) 996 \times 367$$

$$= 367 \times (1000 - 4)$$

$$= 367 \times 1000 - 367 \times 4$$

$$= 367000 - 1468$$

$$= 365532$$

$$(v) 472 \times 1097$$

$$= 472 \times (1100 - 3)$$

$$= 472 \times 1100 - 472 \times 3$$

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$$= 519200 - 1416$$

$$= 517784$$

$$(vi) 580 \times 64$$

$$= 580 \times (60 + 4)$$

$$= 580 \times 60 + 580 \times 4$$

$$= 34800 + 2320$$

$$= 37120$$

$$(vii) 439 \times 997$$

$$= 439 \times (1000 - 3)$$

$$= 439 \times 1000 - 439 \times 3$$

$$= 439000 - 1317$$

$$= 437683$$

$$(viii) 1553 \times 198$$

$$= 1553 \times (200 - 2)$$

$$= 1553 \times 200 - 1553 \times 2$$

$$= 310600 - 3106$$

$$= 307494$$

### Question 6.

#### Solution:

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

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

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$$= 35760 - 3576$$

$$= 32184$$

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

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

$$= 84700 - 847$$

$$= 83853$$

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

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

$$= 2437000 - 2437$$

$$= 2434563$$

**Question 7.**

**Solution:**

$$(i) \begin{array}{r} 458 \\ \times 67 \\ \hline 3206 \\ 27480 \\ \hline 30686 \end{array}$$

$$(ii) \begin{array}{r} 3709 \\ \times 89 \\ \hline 33381 \\ 296720 \\ \hline 330101 \end{array}$$

$$(iii) \begin{array}{r} 4617 \\ \times 234 \\ \hline 18468 \\ 138510 \\ 923400 \\ \hline 1080378 \end{array}$$

$$(iv) \begin{array}{r} 15208 \\ \times 542 \\ \hline 30416 \\ 608320 \\ 7604000 \\ \hline 8242736 \end{array}$$

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**Question 8.****Solution:**

Largest 3-digit number = 999

Largest 5-digit number = 99999

Required product =  $99999 \times 999$

$$= 99999 \times (1000 - 1)$$

$$= 99999 \times 1000 - 99999 \times 1$$

$$= 99999000 - 99999$$

$$= 9,98,99,001$$

**Question 9.****Solution:**

Speed of car = 75 km per hour

In 1 hour, distance covered by a car = 75 km

∴ In 98 hours, distance will be covered =  $75 \times 98$

$$= 75 \times (100 - 2)$$

$$= 75 \times 100 - 75 \times 2$$

$$= 7500 - 150$$

$$= 7350 \text{ km}$$

**Question 10.****Solution:**

Cost of 1 set of VCR = Rs. 24350

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Cost of 139 sets of VCR = Rs. 24350 x 139

= Rs. 3384650

$$\begin{array}{r} 24350 \\ \times 139 \\ \hline 219150 \\ 730500 \\ \hline 2435000 \\ 3384650 \end{array}$$

**Question 11.**

**Solution:**

Cost of 1 house = Rs. 450000

Cost of 197 houses = Rs. 450000 x 197

= Rs. 450000 x (200 – 3)

= Rs. (450000 x 200 – 450000 x 3)

= Rs. (90000000 – 1350000)

= Rs. 88650000

**Question 12.**

**Solution:**

Cost of each chair = Rs. 1065

Cost of 50 chairs = Rs. 1065 x 50

= Rs. 53250

Cost of each blackboard = Rs. 1645

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Cost of 30 blackboards = Rs. 1645 x 30

= Rs. 49350

Total cost of 50 chairs and 30 blackboards = Rs. 53250 + 49350

= Rs. 102600

**Question 13.**

**Solution:**

Number of students in 1 section = 45

Number of students in 6 sections = 45 x 6 = 270

Monthly charges of 1 student = Rs. 1650

Total monthly incomes from the class VI = Rs. 270 x 1650

= Rs. (300 – 30) x 1650

= Rs. (1650 x 300 – 1650 x 30)

= Rs. (495000 – 49500)

= Rs. 445500

**Question 14.**

**Solution:**

Since the product of two whole numbers is zero

∴ From multiplicative property of zero, we conclude that one of the whole numbers is zero.

**Question 15.**

**Solution:**

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- (i) Sum of two odd numbers is an even number.
- (ii) Product of two odd numbers is an odd number.
- (iii)  $a \times a = a \Rightarrow a = 1$  as  $1 \times 1 = 1$

### Ex 3E Solutions

#### Question 1.

#### Solution:

- (i) By actual division, we have

$$\begin{array}{r}
 16 \overline{) 1936} \quad ( 121 \\
 \underline{16} \phantom{00} \\
 33 \phantom{00} \\
 \underline{32} \phantom{00} \\
 16 \phantom{00} \\
 \underline{16} \phantom{00} \\
 \times \phantom{00}
 \end{array}$$

Check :  $121 \times 16 = 1936$ .

(ii) By actual division, we have

$$\begin{array}{r}
 47 \overline{) 19881} \quad ( 423 \\
 \underline{188} \phantom{00} \\
 108 \phantom{00} \\
 \underline{94} \phantom{00} \\
 141 \phantom{00} \\
 \underline{141} \phantom{00} \\
 \times \phantom{00}
 \end{array}$$

Check :

$$\begin{array}{r}
 423 \\
 \times 47 \\
 \hline
 2961 \\
 16920 \\
 \hline
 19881
 \end{array}$$

(iii) By actual division, we have

$$\begin{array}{r}
 341 \overline{) 257796} \quad ( 756 \\
 \underline{2387} \phantom{00} \\
 1909 \phantom{00} \\
 \underline{1705} \phantom{00} \\
 2046 \phantom{00} \\
 \underline{2046} \phantom{00} \\
 \times \phantom{00}
 \end{array}$$

Check :

$$\begin{array}{r}
 756 \\
 \times 341 \\
 \hline
 756 \\
 30240 \\
 226800 \\
 \hline
 257796
 \end{array}$$

(iv) By actual division, we have

$$\begin{array}{r}
 582 \overline{) 612846} \quad (1053 \\
 \underline{582} \phantom{00} \\
 3084 \phantom{00} \\
 \underline{2910} \phantom{00} \\
 1746 \phantom{00} \\
 \underline{1746} \phantom{00} \\
 \times \\
 \hline
 \end{array}$$

Check :

$$\begin{array}{r}
 1053 \\
 \times 582 \\
 \hline
 2106 \\
 84240 \\
 526500 \\
 \hline
 612846
 \end{array}$$

Check :

$$\begin{array}{r}
 1001 \\
 \times 39 \\
 \hline
 9009 \\
 30030 \\
 \hline
 39039
 \end{array}$$

(v) By actual division, we have

$$\begin{array}{r}
 149 \overline{) 34419} \quad (231 \\
 \underline{298} \phantom{00} \\
 461 \phantom{00} \\
 \underline{447} \phantom{00} \\
 149 \phantom{00} \\
 \underline{149} \phantom{00} \\
 \times \\
 \hline
 \end{array}$$

Check :

$$\begin{array}{r}
 231 \\
 \times 149 \\
 \hline
 2079 \\
 9240 \\
 23100 \\
 \hline
 34419
 \end{array}$$

(vi) By actual division, we have

$$\begin{array}{r}
 1001 \overline{) 39039} \quad (39 \\
 \underline{3003} \phantom{00} \\
 9009 \phantom{00} \\
 \underline{9009} \phantom{00} \\
 \times \\
 \hline
 \end{array}$$

## Question 2.

**Solution:**

(i) By actual division, we have

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$$\begin{array}{r} 47 \overline{) 6971} \quad (148 \\ \underline{47} \phantom{00} \\ 227 \phantom{00} \\ \underline{188} \phantom{00} \\ 391 \phantom{00} \\ \underline{376} \phantom{00} \\ 15 \end{array}$$

$\therefore$  Quotient = 148, Remainder = 15

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 47 \times 148 + 15 \\ &= 6956 + 15 \\ &= 6971 \end{aligned}$$

(ii) By actual division, we have

$$\begin{array}{r} 35 \overline{) 4178} \quad (119 \\ \underline{35} \phantom{00} \\ 67 \phantom{00} \\ \underline{35} \phantom{00} \\ 328 \phantom{00} \\ \underline{315} \phantom{00} \\ 13 \end{array}$$

$\therefore$  Quotient = 119, Remainder = 13

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 35 \times 119 + 13 \\ &= 4165 + 13 \\ &= 4178 \end{aligned}$$

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(iii) By actual division, we have

$$\begin{array}{r} 153 \overline{) 36195} \quad (236 \\ \underline{306} \phantom{00} \\ 559 \phantom{00} \\ \underline{459} \phantom{00} \\ 1005 \phantom{00} \\ \underline{918} \phantom{00} \\ 87 \end{array}$$

$\therefore$  Quotient = 236, Remainder = 87

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 153 \times 236 + 87 \\ &= 36108 + 87 \\ &= 36195 \end{aligned}$$

(iv) By actual division, we have

$$\begin{array}{r} 400 \overline{) 93575} \quad (233 \\ \underline{800} \phantom{00} \\ 1357 \phantom{00} \\ \underline{1200} \phantom{00} \\ 1575 \phantom{00} \\ \underline{1200} \phantom{00} \\ 375 \end{array}$$

$\therefore$  Quotient = 233, Remainder = 375

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 400 \times 233 + 375 \\ &= 93200 + 375 \\ &= 93575 \end{aligned}$$

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(v) By actual division, we have

$$\begin{array}{r} 1000 \overline{) 23025} \quad (23 \\ \underline{2000} \\ 3025 \\ \underline{3000} \\ 25 \end{array}$$

$\therefore$  Quotient = 23, Remainder = 25

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 1000 \times 23 + 25 \\ &= 23000 + 25 \\ &= 23025 \end{aligned}$$

(vi) By actual division, we have

$$\begin{array}{r} 875 \overline{) 16135} \quad (18 \\ \underline{875} \\ 7385 \\ \underline{7000} \\ 385 \end{array}$$

$\therefore$  Quotient = 18, Remainder = 385

Check : Dividend = Divisor  $\times$  Quotient  
+ Remainder

$$\begin{aligned} &= 875 \times 18 + 385 \\ &= 15750 + 385 \\ &= 16135 \end{aligned}$$

### Question 3.

**Solution:**

(i) We know that any number (non-zero) divided by 1 gives the number itself

$$65007 \div 1 = 65007$$

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(ii) We know that 0 divided by any natural number gives 0

$$0 \div 879 = 0$$

$$(iii) 981 + 5720 \div 10 = 981 + (5720 \div 10)$$

$$= 981 + 572$$

$$= 1553$$

$$(iv) 1507 - 625 \div 25 = 1507 - (625 \div 25)$$

$$= 1507 - 25$$

$$= 1482$$

$$(v) 32277 \div (648 - 39)$$

$$= 32277 \div 609$$

$$32277 \div (648 - 39) = 53$$

$$(vi) 1573 \div 1573 - 1573 \div 1573$$

$$= (1573 \div 1573) - (1573 \div 1573)$$

$$= 1 - 1$$

$$= 0$$

**Question 4.**

**Solution:**

We have  $n \div n = 1$

let  $n = 1$ ,  $1 \div 1 = 1$

$$1 = 1$$

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which is true

∴ Hence 1 is the required whole number.

**Question 5.**

**Solution:**

Product of two numbers = 504347

One number = 317

Other number =  $504347 \div 317$

$$\begin{array}{r} 317 \overline{) 504347} \quad (1591 \\ \underline{317} \phantom{00000} \\ 1873 \phantom{000} \\ \underline{1585} \phantom{00} \\ 2884 \phantom{0} \\ \underline{2853} \\ 317 \\ \underline{317} \\ \hline \times \end{array}$$

∴ Other number = 1591

**Question 6.**

**Solution:**

Here Dividend = 59761, Quotient = 189

∴ Remainder = 37

We know that Dividend = Divisor x Quotient + Remainder

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$$59761 = \text{Divisor} \times 189 + 37$$

$$59761 - 37 = \text{Divisor} \times 189$$

$$59724 = \text{Divisor} \times 189$$

$$\text{Divisor} \times 189 = 59724$$

$$\therefore \text{Divisor} = 59724 \div 189$$

$$\begin{array}{r} 189 \overline{) 59724} \quad (316 \\ \underline{567} \phantom{00} \\ 302 \phantom{00} \\ \underline{189} \phantom{00} \\ 1134 \phantom{00} \\ \underline{1134} \phantom{00} \\ \times \phantom{00} \end{array}$$

$$\therefore \text{Divisor} = 59724 \div 189 = 316$$

### Question 7.

#### Solution:

Here dividend = 55390,

Divisor = 299 and Remainder = 75

By division algorithm, we have

Dividend = Quotient  $\times$  Divisor + Remainder

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

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

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

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

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Quotient =  $55315 \div 299$

$$\begin{array}{r} 299 \overline{) 55315} \quad 185 \\ \underline{299} \phantom{00} \\ 2541 \phantom{00} \\ \underline{2392} \phantom{00} \\ 1495 \phantom{00} \\ \underline{1495} \phantom{00} \\ 0 \end{array}$$

$\therefore$  Required quotient = 185

**Question 8.**

**Solution:**

On dividing 13601 by 87, we have

$$\begin{array}{r} 87 \overline{) 13601} \quad 156 \\ \underline{87} \phantom{00} \\ 490 \phantom{00} \\ \underline{435} \phantom{00} \\ 551 \phantom{00} \\ \underline{522} \phantom{00} \\ 29 \end{array}$$

It is clear that if we subtract 29 from 13601, the resulting number will be exactly divisible by 87.

$\therefore$  The required least number = 29.

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**Question 9.****Solution:**

Here dividend = 1056, Divisor = 23

By actual division, we have

$$\begin{array}{r} 23 \overline{)1056} \quad 45 \\ \underline{92} \phantom{00} \\ 136 \phantom{00} \\ \underline{115} \phantom{00} \\ 21 \end{array}$$

It is clear that if we add 2 to 21, it will become 23 which is divisible by 23.

∴ Required least number = 2.

**Question 10.****Solution:**

Greatest 4-digit number = 9999

$$\begin{array}{r} 16 \overline{)9999} \quad 624 \\ \underline{96} \phantom{00} \\ 39 \phantom{00} \\ \underline{32} \phantom{00} \\ 79 \phantom{00} \\ \underline{64} \phantom{00} \\ 15 \end{array}$$

On, dividing by 16, we get remainder as 15

∴ The required largest 4-digit number = 9999 – 15

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= 9984

**Question 11.**

**Solution:**

Largest number of 5-digits = 99999

On dividing 99999 by 653, we have

$$\begin{array}{r} 653 \overline{) 99999} \quad 153 \\ \underline{653} \phantom{00} \\ 3469 \phantom{00} \\ \underline{3265} \phantom{00} \\ 2049 \phantom{00} \\ \underline{1959} \phantom{00} \\ 90 \end{array}$$

∴ Quotient = 153, Remainder = 90

Check : By division algorithm Dividend = Divisor x Quotient + Remainder

$$= 653 \times 153 + 90$$

$$= 99909 + 90$$

$$= 99999$$

**Question 12.**

**Solution:**

The least 6-digit number = 100000

On dividing 100000 by 83, we have

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$$\begin{array}{r}
 83 \overline{) 100000} \quad (1204 \\
 \underline{83} \phantom{00000} \\
 170 \phantom{0000} \\
 \underline{166} \phantom{000} \\
 400 \phantom{00} \\
 \underline{332} \phantom{0} \\
 68
 \end{array}$$

It is clear that if we add 15 to 68, it will become 83 which is divisible by 83.

∴ Required least 6-digit number = 100000 + 15

= 100015

### Question 13.

**Solution:**

Cost of 1 dozen bananas = Rs. 29

Bananas can be purchase in Rs. 1392

$$\begin{array}{r}
 29 \overline{) 1392} \quad 48 \\
 \underline{116} \phantom{00} \\
 232 \phantom{0} \\
 \underline{232} \\
 \times
 \end{array}$$

1392 ÷ 29

= 48 dozens

### Question 14.

**Solution:**

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Total number of trees = 19625

Total number of rows = 157

Number of trees in each row =  $19625 \div 157$

$$\begin{array}{r} 157 \overline{) 19625} \quad (125 \\ \underline{157} \phantom{00} \\ 392 \phantom{00} \\ \underline{314} \phantom{00} \\ 785 \phantom{00} \\ \underline{785} \phantom{00} \\ 0 \end{array}$$

$\therefore$  Number of trees in each row = 125

#### Question 15.

**Solution:**

Total population of the town = 517530

Since there is one educated person out of 15

Total number of educated persons in the town =  $517530 \div 15$

$$\begin{array}{r} 15 \overline{) 517530} \quad (34502 \\ \underline{45} \phantom{00} \\ 67 \phantom{00} \\ \underline{60} \phantom{00} \\ 75 \phantom{00} \\ \underline{75} \phantom{00} \\ 30 \phantom{00} \\ \underline{30} \phantom{00} \\ 0 \end{array}$$

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∴ Total number of educated persons in the town = 34502.

**Question 16.**

**Solution:**

Cost of 23 colour TV sets = Rs. 570055

Cost of 1 colour TV set

∴ Cost of 1 color TV set

= Rs.  $570055 \div 23$

= Rs. 24785

**Ex 3F Solutions**

**Objective questions**

**Mark against the correct answer in each of the following :**

**Question 1.**

**Solution:**

The smallest whole number is 0 (b)

**Question 2.**

**Solution:**

The least 4-digit number = 1000

On dividing 1000 by 9, we get

Remainder = 1

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$$\begin{array}{r} 9 \overline{)1000} \text{ ( 111} \\ \underline{9} \phantom{00} \\ 10 \phantom{0} \\ \underline{9} \phantom{0} \\ 10 \phantom{0} \\ \underline{9} \phantom{0} \\ 1 \end{array}$$

Least 4-digit number which is

Divisible by 9 =  $1000 - 1 + 9$

=  $1000 + 8$

= 1008 (d)

**Question 3.**

**Solution:**

The largest 6-digit number = 999999

On dividing by 16, we get

Remainder = 15

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$$\begin{array}{r} 16 \overline{)99999} \text{ ( 62499} \\ \underline{96} \phantom{00} \\ 39 \phantom{00} \\ \underline{32} \phantom{00} \\ 79 \phantom{00} \\ \underline{64} \phantom{00} \\ 159 \phantom{00} \\ \underline{144} \phantom{00} \\ 159 \phantom{00} \\ \underline{144} \phantom{00} \\ 15 \end{array}$$

The greatest 6-digit number divisible by 16

$$= 999999 - 15$$

$$= 999984 \text{ (c)}$$

**Question 4.**

**Solution:**

On dividing 10004 by 12, we get remainder = 8

$$\begin{array}{r} 12 \overline{)10004} \text{ ( 833} \\ \underline{96} \phantom{00} \\ 40 \phantom{00} \\ \underline{36} \phantom{00} \\ 44 \phantom{00} \\ \underline{36} \phantom{00} \\ 8 \end{array}$$

8 is to be subtracted from 10004 (c)

**Question 5.**

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**Solution:**

On dividing 10056 by 23 We get remainder = 12

$$\begin{array}{r} 23 \overline{)10056} \text{ ( 437} \\ \underline{92} \phantom{00} \\ 85 \phantom{00} \\ \underline{69} \phantom{00} \\ 166 \phantom{00} \\ \underline{161} \phantom{00} \\ \underline{5} \phantom{00} \end{array}$$

The least number to be added =  $23 - 5$

= 18 (b)

**Question 6.****Solution:**

On dividing 457 by 11

We get remainder = 6

$$\begin{array}{r} 11 \overline{)457} \text{ ( 41} \\ \underline{44} \phantom{00} \\ 17 \phantom{00} \\ \underline{11} \phantom{00} \\ \underline{6} \phantom{00} \end{array}$$

Which is greater than half of 11

The number nearest to 457 which is divisible 11 will be =  $457 - 6 + 11$

=  $457 + 5$

= 462 (d)

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**Question 7.****Solution:**

Whole number between 1018 and 1203 are 1019 to 1202 are  $1202 - 1018$

$$= 184 \text{ (c)}$$

**Question 8.****Solution:**

Divisor = 46

Quotient = 11

Remainder = 15

Number = Divisor  $\times$  Quotient + Remainder

$$= 46 \times 11 + 15$$

$$= 506 + 15$$

$$= 521 \text{ (b)}$$

**Question 9.****Solution:**

Dividend = 199

Quotient = 16

Remainder = 7

Divisor =  $199 - 716 = 19216$

$$= 12 \text{ (c)}$$

**Question 10.**

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**Solution:**

$$7589 - ? = 3434$$

$$\text{Required number} = 7589 - 3434$$

$$= 4155 \text{ (c)}$$

**Question 11.**

**Solution:**

$$587 \times 99 = 587 \times (100 - 1)$$

$$= 587 \times 100 - 587 \times 1$$

$$= 58700 - 587$$

$$= 58113 \text{ (c)}$$

**Question 12.**

**Solution:**

$$4 \times 538 \times 25 = 538 \times 4 \times 25$$

$$= 538 \times 100$$

$$= 53800 \text{ (c)}$$

**Question 13.**

**Solution:**

$$24679 \times 92 + 24679 \times 8$$

$$= 24679 \times (92 + 8)$$

$$= 24679 \times 100$$

$$= 2467900 \text{ (c)}$$

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**Question 14.****Solution:**

$$1625 \times 1625 - 1625 \times 625$$

$$= 1625 (1625 - 625)$$

$$= 1625 \times 1000$$

$$= 1625000 \text{ (a)}$$

**Question 15.****Solution:**

$$1568 \times 185 - 1568 \times 85$$

$$= 1568 (185 - 85)$$

$$= 1568 \times 100$$

$$= 156800 \text{ (c)}$$

**Question 16.****Solution:**

$$888 + 111 + 555 = 111 \times ?$$

$$= 11 (8 + 7 + 5)$$

$$= 111 \times 20 \text{ (c)}$$

**Question 17.****Solution:**

The sum of two odd number is an even number (b)

**Question 18.**

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**Solution:**

The product of two odd numbers is an odd number (a)

**Question 19.****Solution:**

If  $a$  is a whole number such that

$$a + a = a, \text{ then } a = 0$$

$$\text{as } 0 + 0 = 0$$

None of these (d)

**Question 20.****Solution:**

The predecessor of 10000 is  $10000 - 1$

$$= 9999 \text{ (b)}$$

**Question 21.****Solution:**

The successor of 1001 is  $1001 + 1$

$$= 1002 \text{ (b)}$$

**Question 22.****Solution:**

The smallest even whole number is 2 (b)

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- Chapter 1–Number System
- Chapter 2–Factors and Multiples
- Chapter 3–Whole Numbers
- Chapter 4–Integers
- Chapter 5–Fractions
- Chapter 6–Simplification
- Chapter 7–Decimals
- Chapter 8–Algebraic Expressions
- Chapter 9–Linear Equations in One Variable
- Chapter 10–Ratio, Proportion and Unitary Method
- Chapter 11–Line Segment, Ray and Line
- Chapter 12–Parallel Lines
- Chapter 13–Angles and Their Measurement
- Chapter 14–Constructions (Using Ruler and a Pairs of Compasses)
- Chapter 15–Polygons
- Chapter 16–Triangles
- Chapter 17–Quadrilaterals
- Chapter 18–Circles
- Chapter 19–Three-Dimensional Shapes
- Chapter 20–Two-Dimensional Reflection Symmetry (Linear Symmetry)
- Chapter 21–Concept of Perimeter and Area
- Chapter 22–Data Handling
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He was born on January 2, 1946 in a village of Delhi. He graduated from Kirori Mal College, University of Delhi. After completing his M.Sc. in Mathematics in 1969, he joined N.A.S. College, Meerut, as a lecturer. In 1976, he was awarded a fellowship for 3 years and joined the University of Delhi for his Ph.D. Thereafter, he was promoted as a reader in N.A.S. College, Meerut. In 1999, he joined M.M.H. College, Ghaziabad, as a reader and took voluntary retirement in 2003. He has authored more than 75 titles ranging from Nursery to M. Sc. He has also written books for competitive examinations right from the clerical grade to the I.A.S. level.

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