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RS Aggarwal Solutions for Class 6 Mathematics  
Whole Numbers  
Ex 3A

Q1

**Answer :**

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

Q2

**Answer :**

Three whole numbers occurring just before 10001 are as follows:

$$10001 - 1 = 10000$$

$$10000 - 1 = 9999$$

$$9999 - 1 = 9998$$

∴ The three whole numbers just before 10001 are 10000, 9999 and 9998.

Q3

**Answer :**

$$\begin{aligned}\text{Number of whole numbers between 1032 and 1209} &= (1209 - 1032) - 1 \\ &= 177 - 1 \\ &= 176\end{aligned}$$

Q4

**Answer :**

0 (zero) is the smallest whole number.

All the natural numbers along with 0 are called whole numbers.

Q5

**Answer :**

- (i) Successor of 2540801 =  $2540801 + 1 = 2540802$
- (ii) Successor of 9999 =  $9999 + 1 = 10000$
- (iii) Successor of 50904 =  $50904 + 1 = 50905$
- (iv) Successor of 61639 =  $61639 + 1 = 61640$
- (v) Successor of 687890 =  $687890 + 1 = 687891$
- (vi) Successor of 5386700 =  $5386700 + 1 = 5386701$
- (vii) Successor of 6475999 =  $6475999 + 1 = 6476000$
- (viii) Successor of 9999999 =  $9999999 + 1 = 10000000$

Q6

**Answer :**

- (i) Predecessor of 97 =  $97 - 1 = 96$
- (ii) Predecessor of 10000 =  $10000 - 1 = 9999$
- (iii) Predecessor of 36900 =  $36900 - 1 = 36899$
- (iv) Predecessor of 7684320 =  $7684320 - 1 = 7684319$
- (v) Predecessor of 1566391 =  $1566391 - 1 = 1566390$
- (vi) Predecessor of 2456800 =  $2456800 - 1 = 2456799$
- (vii) Predecessor of 100000 =  $100000 - 1 = 99999$
- (viii) Predecessor of 1000000 =  $1000000 - 1 = 999999$

Q7

**Answer :**

The three consecutive whole numbers just preceding 7510001 are as follows:

$$\begin{aligned}7510001 - 1 &= 7510000 \\7510000 - 1 &= 7509999 \\7509999 - 1 &= 7509998\end{aligned}$$

∴ The three consecutive numbers just preceding 7510001 are 7510000, 7509999 and 7509998.

Q8

**Answer :**

- (i) False. 0 is not a natural number. 1 is the smallest natural number.
- (ii) True.
- (iii) False. 0 is a whole number but not a natural number.
- (iv) True. Natural numbers include 1, 2, 3 ..., which are whole numbers.
- (v) False. 0 is the smallest whole number.
- (vi) True. The predecessor of 1 is  $1 - 1 = 0$ , which is not a natural number.
- (vii) False. The predecessor of 1 is  $1 - 1 = 0$ , which is a whole number.
- (viii) True. The predecessor of 0 is  $0 - 1 = -1$ , which is not a whole number.
- (ix) False. The predecessor of a two-digit number can be a single digit number. For example, the predecessor of 10 is  $10 - 1$ , i.e., 9.
- (x) False. The successor of a two-digit number is not always a two-digit number. For example, the successor of 99 is  $99 + 1$ , i.e., 100.
- (xi) False. The predecessor of 499 is  $499 - 1$ , i.e., 498.
- (xii) True. The successor of 6999 is  $6999 + 1$ , i.e., 7000.

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Ex 3B

Q1

**Answer :**

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

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

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

(iv)  $8063 + 0 = 8063$

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

Q2

**Answer :**

(i)  $16509 + 114 = 16623$

By reversing the order of the addends, we get:

$$114 + 16509 = 16623$$

$$\therefore 16509 + 114 = 114 + 16509$$

(ii)  $2359 + 548 = 2907$

By reversing the order of the addends, we get:

$$548 + 2359 = 2907$$

$$\therefore 2359 + 548 = 548 + 2359$$

(iii)  $19753 + 2867 = 22620$

By reversing the order of the addends, we get:

$$2867 + 19753 = 22620$$

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

Q3

**Answer :**

We have:

$$(1546 + 498) + 3589 = 2044 + 3589 = 5633$$

$$\text{Also, } 1546 + (498 + 3589) = 1546 + 4087 = 5633$$

Yes, the two sums are equal.

The associative property of addition is satisfied.

Q4

**Answer :**

$$(i) \ 953 + 707 + 647$$

$$953 + (707 + 647) \quad (\text{Using associative property of addition})$$

$$= 953 + 1354$$

$$= 2307$$

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

$$(1983 + 647) + (217 + 353) \quad (\text{Using associative property of addition})$$

$$= 2630 + 570$$

$$= 3200$$

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

$$(15409 + 278) + (691 + 422) \quad (\text{Using associative property of addition})$$

$$= 15687 + 1113$$

$$= 16800$$

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

$$(3259 + 10001) + (2641 + 9999) \quad (\text{Using associative property of addition})$$

$$= 13260 + 12640$$

$$= 25900$$

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

$$(1 + 2 + 3 + 4) + (96 + 97 + 98 + 99) \quad (\text{Using associative property of addition})$$

$$= (10) + (390)$$

$$= 400$$

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

$$(2 + 3 + 4 + 5) + (45 + 46 + 47 + 48) \quad (\text{Using associative property of addition})$$

$$= 14 + 186$$

$$= 200$$

Q5

**Answer :**

$$(i) \ 6784 + 9999$$

$$= 6784 + (10000 - 1)$$

$$= (6784 + 10000) - 1 \quad (\text{Using associative property of addition})$$

$$= 16784 - 1$$

$$= 16783$$

$$(ii) \ 10578 + 99999$$

$$= 10578 + (100000 - 1)$$

$$= (10578 + 100000) - 1 \quad (\text{Using associative property of addition})$$

$$= 110578 - 1$$

$$= 110577$$

Q6

**Answer :**

For any whole numbers  $a$ ,  $b$  and  $c$ , we have:

$$(a + b) + c = a + (b + c)$$

Let  $a = 2$ ,  $b = 3$  and  $c = 4$  [we can take any values for  $a$ ,  $b$  and  $c$ ]

$$\text{LHS} = (a + b) + c$$

$$= (2 + 3) + 4$$

$$= 5 + 4$$

$$= 9$$

$$\text{RHS} = a + (b + c)$$

$$= a + (b + c) \quad [\because \text{Whole numbers follow the commutative law}]$$

$$= 2 + (3 + 4)$$

$$= 2 + 7$$

$$= 9$$

$\therefore$  This shows that associativity (in addition) is one of the properties of whole numbers.

Q7

**Answer :**

In a magic square, the sum of each row is equal to the sum of each column and the sum of each main diagonal. By using this concept, we have:

(i)

4	9	2
3	5	7
8	1	6

(ii)

16	2	12
6	10	14
8	18	4

(iii)

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

(iv)

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

Q8

**Answer :**

(i) F (false). The sum of two odd numbers may not be an odd number. Example:  $3 + 5 = 8$ , which is an even number.

(ii) T (true). The sum of two even numbers is an even number. Example:  $2 + 4 = 6$ , which is an even number.

(iii) T (true). The sum of an even and an odd number is an odd number. Example:  $5 + 4 = 9$ , which is an odd number.

Whole Numbers

Ex 3C

Q1

**Answer :**

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

Addition:  $5543 + 694 = 6237$

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

Addition:  $10306 + 10899 = 21205$

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

Addition:  $21013 + 78987 = 100000$

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

Addition:  $353536 + 656565 = 1010101$

Q2

**Answer :**

(i)  $917 - 5* = 5*8$

$$\begin{array}{r} 917 \\ - 5* \\ \hline 5*8 \end{array} \Rightarrow \begin{array}{r} 917 \\ - 359 \\ \hline 558 \end{array}$$

$\Rightarrow 917 - 359 = 558$

(ii)  $6172 - **69 = 29**$

$$\begin{array}{r} 6172 \\ - **69 \\ \hline 29** \end{array} \Rightarrow \begin{array}{r} 6172 \\ - 3269 \\ \hline 2903 \end{array}$$

$\Rightarrow 6172 - 3269 = 2903$

(iii)  $5001003 - **6987 = 484****$

$$\begin{array}{r} 5001003 \\ - **6987 \\ \hline 484**** \end{array} \Rightarrow \begin{array}{r} 5001003 \\ - 156987 \\ \hline 4845016 \end{array}$$

$\Rightarrow 5001003 - 155987 = 4845016$

(iv)  $1000000 - ****1 = *7042*$

$$\begin{array}{r} 1000000 \\ - ****1 \\ \hline *7042* \end{array} \Rightarrow \begin{array}{r} 1000000 \\ - 29571 \\ \hline 970429 \end{array}$$

$\Rightarrow 1000000 - 29571 = 970429$

Q3

**Answer :**

(i)  $463 - 9$   
 $= 463 - 10 + 1$   
 $= 464 - 10$   
 $= 454$

(ii)  $5632 - 99$   
 $= 5632 - 100 + 1$   
 $= 5633 - 100$   
 $= 5533$

(iii)  $8640 - 999$   
 $= 8640 - 1000 + 1$   
 $= 8641 - 1000$   
 $= 7641$

(iv)  $13006 - 9999$   
 $= 13006 - 10000 + 1$   
 $= 13007 - 10000$   
 $= 3007$

Q4

**Answer :**

Smallest seven-digit number = 1000000

Largest four-digit number = 9999

$\therefore$  Their difference =  $1000000 - 9999$   
 $= 1000000 - 10000 + 1$   
 $= 1000001 - 10000$   
 $= 990001$

Q5

**Answer :**

Money deposited by Ravi = Rs 1,36,000

Money withdrawn by Ravi = Rs 73,129

Money left in his account = money deposited - money withdrawn  
 $= \text{Rs } (136000 - 73129)$   
 $= \text{Rs } 62871$

$\therefore$  Rs 62,871 is left in Ravi's account.

Q6

**Answer :**

Money withdrawn by Mrs Saxena = Rs 1,00,000

Cost of the TV set = Rs 38,750

Cost of the refrigerator = Rs 23,890

Cost of the jewellery = Rs 35,560

Total money spent = Rs (38750 + 23890 + 35560) = Rs 98200

Now, money left = money withdrawn – money spent

$$= \text{Rs } (100000 - 98200)$$

$$= \text{Rs } 1800$$

∴ Rs 1,800 is left with Mrs Saxena.

Q7

**Answer :**

Population of the town = 110500

Increased population = 110500 + 3608 = 114108

Number of persons who died or left the town = 8973

Population at the end of the year = 114108 – 8973 = 105135

∴ The population at the end of the year will be 105135.

Q8

**Answer :**

(i)  $n + 4 = 9$

$$\Rightarrow n = 9 - 4 = 5$$

(ii)  $n + 35 = 101$

$$\Rightarrow n = 101 - 35 = 66$$

(iii)  $n - 18 = 39$

$$\Rightarrow n = 18 + 39 = 57$$

(iv)  $n - 20568 = 21403$

$$\Rightarrow n = 21403 + 20568 = 41971$$



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Ex 3D

Q1

**Answer :**

- (i)  $246 \times 1 = 246$
- (ii)  $1369 \times 0 = 0$
- (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)  $68 \times 95 = 68 \times 100 - 68 \times 5$

Q2

**Answer :**

- (i) Commutative law in multiplication
- (ii) Closure property
- (iii) Associativity of multiplication
- (iv) Multiplicative identity
- (v) Property of zero
- (vi) Distributive law of multiplication over addition
- (vii) Distributive law of multiplication over subtraction

Q3

**Answer :**

$$\begin{aligned} & \text{(i) } 647 \times 13 + 647 \times 7 \\ &= 647 \times (13 + 7) \\ &= 647 \times 20 \\ &= 12940 \end{aligned}$$

(By using distributive property)

$$\begin{aligned} & \text{(ii) } 8759 \times 94 + 8759 \times 6 \\ &= 8759 \times (94 + 6) \\ &= 8759 \times 100 \\ &= 875900 \end{aligned}$$

(By using distributive property)

$$\begin{aligned} & \text{(iii) } 7459 \times 999 + 7459 \\ &= 7459 \times (999 + 1) \\ &= 7459 \times 1000 \\ &= 7459000 \end{aligned}$$

(By using distributive property)

$$\begin{aligned} & \text{(iv) } 9870 \times 561 - 9870 \times 461 \\ &= 9870 \times (561 - 461) \\ &= 9870 \times 100 \\ &= 987000 \end{aligned}$$

(By using distributive property)

$$\begin{aligned} & \text{(v) } 569 \times 17 + 569 \times 13 + 569 \times 70 \\ &= 569 \times (17 + 13 + 70) \\ &= 569 \times 100 \\ &= 56900 \end{aligned}$$

(By using distributive property)

$$\begin{aligned} & \text{(vi) } 16825 \times 16825 - 16825 \times 6825 \\ &= 16825 \times (16825 - 6825) \\ &= 16825 \times 10000 \\ &= 168250000 \end{aligned}$$

(By using distributive property)

Q4

**Answer :**

$$\begin{aligned} & \text{(i) } 2 \times 1658 \times 50 \\ &= (2 \times 50) \times 1658 \\ &= 100 \times 1658 \\ &= 165800 \end{aligned}$$

$$\begin{aligned} & \text{(ii) } 4 \times 927 \times 25 \\ &= (4 \times 25) \times 927 \\ &= 100 \times 927 \\ &= 92700 \end{aligned}$$

$$\begin{aligned} & \text{(iii) } 625 \times 20 \times 8 \times 50 \\ &= (20 \times 50) \times 8 \times 625 \\ &= 1000 \times 8 \times 625 \\ &= 8000 \times 625 \\ &= 5000000 \end{aligned}$$

$$\begin{aligned} & \text{(iv) } 574 \times 625 \times 16 \\ &= 574 \times (625 \times 16) \\ &= 574 \times 10000 \\ &= 5740000 \end{aligned}$$

$$\begin{aligned} & \text{(v) } 250 \times 60 \times 50 \times 8 \\ &= (250 \times 8) \times (60 \times 50) \\ &= 2000 \times 3000 \\ &= 6000000 \end{aligned}$$

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

Q5

**Answer :**

(i)  $740 \times 105$   
 $= 740 \times (100 + 5)$   
 $= 740 \times 100 + 740 \times 5$  (Using distributive law of multiplication over addition)  
 $= 74000 + 3700$   
 $= 77700$

(ii)  $245 \times 1008$   
 $= 245 \times (1000 + 8)$   
 $= 245 \times 1000 + 245 \times 8$  (Using distributive law of multiplication over addition)  
 $= 245000 + 1960$   
 $= 246960$

(iii)  $947 \times 96$   
 $= 947 \times (100 - 4)$   
 $= 947 \times 100 - 947 \times 4$  (Using distributive law of multiplication over subtraction)  
 $= 94700 - 3788$   
 $= 90912$

(iv)  $996 \times 367$   
 $= 367 \times (1000 - 4)$   
 $= 367 \times 1000 - 367 \times 4$  (Using distributive law of multiplication over subtraction)  
 $= 367000 - 1468$   
 $= 365532$

Q6

**Answer :**

Distributive property of multiplication over addition states that  $a(b + c) = ab + ac$   
Distributive property of multiplication over subtraction states that  $a(b - c) = ab - ac$

(i)  $3576 \times 9$   
 $= 3576 \times (10 - 1)$   
 $= 3576 \times 10 - 3576 \times 1$   
 $= 35760 - 3576$   
 $= 32184$

(ii)  $847 \times 99$   
 $= 847 \times (100 - 1)$   
 $= 847 \times 100 - 847 \times 1$   
 $= 84700 - 847$   
 $= 83853$

(iii)  $2437 \times 999$   
 $= 2437 \times (1000 - 1)$   
 $= 2437 \times 1000 - 2437 \times 1$   
 $= 2437000 - 2437$   
 $= 2434563$

Q7

**Answer :**

(i)

$$\begin{array}{r} 456 \\ \times 67 \\ \hline 3206 \text{ Multiplication by 7} \\ 27480 \text{ Multiplication by 60} \\ \hline 30686 \end{array}$$

$456 \times 67 = 30686$

(ii)

$$\begin{array}{r} 3709 \\ \times 89 \\ \hline 33381 \text{ Multiplication by 9} \\ 296720 \text{ Multiplication by 80} \\ \hline 330101 \end{array}$$

$3709 \times 89 = 330101$

(iii)

$$\begin{array}{r} 4617 \\ \times 234 \\ \hline 18468 \text{ Multiplication by 4} \\ 138510 \text{ Multiplication by 30} \\ 923400 \text{ Multiplication by 200} \\ \hline 1080378 \end{array}$$

$$4617 \times 234 = 1080378$$

(iv)

$$\begin{array}{r} 15208 \\ \times 542 \\ \hline 30416 \text{ Multiplication by 2} \\ 608320 \text{ Multiplication by 40} \\ 7604000 \text{ Multiplication by 500} \\ \hline 8242736 \end{array}$$

$$15208 \times 542 = 8242736$$

Q8

**Answer :**

Largest three-digit number = 999

Largest five-digit number = 99999

∴ Product of the two numbers =  $999 \times 99999$

$$\begin{aligned} &= 999 \times (100000 - 1) && \text{(Using distributive law)} \\ &= 99900000 - 999 \\ &= 99899001 \end{aligned}$$

Q9

**Answer :**

Uniform speed of a car = 75 km/h

Distance = speed  $\times$  time

$$\begin{aligned} &= 75 \times 98 \\ &= 75 \times (100 - 2) && \text{(Using distributive law)} \\ &= 75 \times 100 - 75 \times 2 \\ &= 7500 - 150 \\ &= 7350 \text{ km} \end{aligned}$$

∴ The distance covered in 98 h is 7350 km.

Q10

**Answer :**

Cost of 1 VCR set = Rs 24350

Cost of 139 VCR sets =  $139 \times 24350$

$$\begin{aligned} &= 24350 \times (140 - 1) && \text{(Using distributive property)} \\ &= 24350 \times 140 - 24350 \\ &= 3409000 - 24350 \\ &= \text{Rs. } 3384650 \end{aligned}$$

∴ The cost of all the VCR sets is Rs 33,84,650.

Q11

**Answer :**

Cost of construction of 1 house = Rs 450000

Cost of construction of 197 such houses =  $197 \times 450000$

$$= 450000 \times (200 - 3)$$

$$= 450000 \times 200 - 450000 \times 3$$

[Using distributive

property of multiplication over subtraction]

$$= 90000000 - 1350000$$

$$= 88650000$$

$\therefore$  The total cost of construction of 197 houses is Rs 8,86,50,000.

Q12

**Answer :**

Cost of a chair = Rs 1065

Cost of a blackboard = Rs 1645

Cost of 50 chairs =  $50 \times 1065$  = Rs 53250

Cost of 30 blackboards =  $30 \times 1645$  = Rs 49350

$\therefore$  Total amount of the bill = cost of 50 chairs + cost of 30 blackboards

$$= \text{Rs } (53250 + 49350)$$

$$= \text{Rs } 1,02,600$$

Q13

**Answer :**

Number of student in 1 section = 45

Number of students in 6 sections =  $45 \times 6 = 270$

Monthly charges from 1 student = Rs 1650

$\therefore$  Total monthly collection from class VI =  $\text{Rs } 1650 \times 270 = \text{Rs } 4,45,500$

Q14

**Answer :**

If the product of two whole numbers is zero, then one of them is definitely zero.

Example:  $0 \times 2 = 0$  and  $0 \times 15 = 0$

If the product of whole numbers is zero, then both of them may be zero.

i.e.,  $0 \times 0 = 0$

Now,  $2 \times 5 = 10$ . Here, the product will be non-zero because the numbers to be multiplied are not equal to zero.

Q15

**Answer :**

(i) Sum of two odd numbers is an even number. Example:  $3 + 5 = 8$ , which is an even number.

(ii) Product of two odd numbers is an odd number. Example:  $5 \times 7 = 35$ , which is an odd number.

(iii)  $a \neq 0$  and  $a \times a = a$

Given:  $a \times a = a$

$$\Rightarrow a = \frac{a}{a} = 1, a \neq 0$$

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Q1

**Answer :**

(i)

$$\begin{array}{r} 53 \\ 36 \overline{)1936} \\ \underline{-180} \phantom{00} \\ 136 \\ \underline{-108} \phantom{00} \\ 28 \end{array}$$

Dividend = 1936, Divisor = 36, Quotient = 53, Remainder = 28

Check: Divisor  $\times$  Quotient + Remainder =  $36 \times 53 + 28$   
= 1936  
= Dividend

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

(ii)  $19881 \div 47$

$$\begin{array}{r} 423 \\ 47 \overline{)19881} \\ \underline{-188} \phantom{00} \\ 108 \\ \underline{-94} \phantom{00} \\ 141 \\ \underline{-141} \phantom{00} \\ 0 \end{array}$$

Dividend = 19881, Divisor = 47, Quotient = 423, Remainder = 0

Check: Divisor  $\times$  Quotient + Remainder =  $47 \times 423 + 0$   
= 19881  
= Dividend

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

(iii)

$$\begin{array}{r}
 756 \\
 341 \overline{) 257796} \\
 \underline{-2387} \phantom{00} \\
 1909 \phantom{00} \\
 \underline{-1705} \phantom{00} \\
 2046 \phantom{00} \\
 \underline{-2046} \phantom{00} \\
 0
 \end{array}$$

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

Check : Divisor  $\times$  Quotient + Remainder =  $341 \times 756 + 0$

$$= 257796$$

$$= \text{Dividend}$$

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

(iv)  $612846 \div 582$

$$\begin{array}{r}
 1053 \\
 582 \overline{) 612846} \\
 \underline{-582} \phantom{000} \\
 3084 \phantom{00} \\
 \underline{-2910} \phantom{00} \\
 1746 \phantom{00} \\
 \underline{-1746} \phantom{00} \\
 0
 \end{array}$$

Dividend = 612846 , Divisor = 582 , Quotient = 1053 , Remainder = 0

Check : Divisor  $\times$  Quotient + Remainder =  $582 \times 1053 + 0$

$$= 612846$$

$$= \text{Dividend}$$

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

(v)  $34419 \div 149$

$$\begin{array}{r}
 231 \\
 149 \overline{) 34419} \\
 \underline{-298} \phantom{00} \\
 461 \phantom{00} \\
 \underline{-447} \phantom{00} \\
 149 \phantom{00} \\
 \underline{-149} \phantom{00} \\
 0
 \end{array}$$

Dividend = 34419 , Divisor = 149 , Quotient = 231 , Remainder = 0

Check : Divisor  $\times$  Quotient + Remainder =  $149 \times 231 + 0$

$$= 34419$$

$$= \text{Dividend}$$

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

(vi)  $39039 \div 1001$

$$\begin{array}{r}
 39 \\
 1001 \overline{) 39039} \\
 \underline{-3003} \phantom{00} \\
 9009 \phantom{00} \\
 \underline{-9009} \phantom{00} \\
 0
 \end{array}$$

Dividend = 39039 , Divisor = 1001 , Quotient = 39 , Remainder = 0

Check : Divisor  $\times$  Quotient + Remainder =  $1001 \times 39 + 0$

$$= 39039$$

$$= \text{Dividend}$$

Hence, Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

Q2

**Answer :**

(i)  $6971 \div 47$

$$\begin{array}{r} 148 \\ 47 \overline{) 6971} \\ \underline{- 47} \phantom{1} \\ 227 \\ \underline{- 188} \phantom{1} \\ 391 \\ \underline{- 376} \phantom{1} \\ 15 \end{array}$$

Quotient = 148 and Remainder = 15

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{Remainder} &= 47 \times 148 + 15 \\ &= 6971 \\ &= \text{Dividend} \end{aligned}$$

$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$

Verified.

(ii)  $4178 \div 35$

$$\begin{array}{r} 119 \\ 35 \overline{) 4178} \\ \underline{- 35} \phantom{1} \\ 67 \\ \underline{- 35} \phantom{1} \\ 328 \\ \underline{- 315} \phantom{1} \\ 13 \end{array}$$

Dividend = 119 and Remainder = 13

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{remainder} &= 35 \times 119 + 13 \\ &= 4178 \\ &= \text{Dividend} \end{aligned}$$

$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$

Verified.

(iii)  $36195 \div 153$

$$\begin{array}{r} 236 \\ 153 \overline{) 36195} \\ \underline{- 306} \phantom{1} \\ 559 \\ \underline{- 459} \phantom{1} \\ 1005 \\ \underline{- 918} \phantom{1} \\ 87 \end{array}$$

Quotient = 236 and Remainder = 87

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{Remainder} &= 153 \times 236 + 87 \\ &= 36195 \\ &= \text{Dividend} \end{aligned}$$

$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$

Verified.



(iv)  $93575 \div 400$

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

Quotient = 233 and Remainder = 375

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{Remainder} &= 400 \times 233 + 375 \\ &= 93575 \\ &= \text{Dividend} \end{aligned}$$

$$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$$

Verified.

(v)  $23025 \div 1000$

$$\begin{array}{r} 23 \\ 1000 \overline{) 23025} \\ \underline{- 2000} \phantom{00} \\ 3025 \phantom{00} \\ \underline{- 3000} \phantom{00} \\ 25 \end{array}$$

Quotient = 23 and remainder = 25

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{Remainder} &= 1000 \times 23 + 25 \\ &= 23025 \\ &= \text{Dividend} \end{aligned}$$

$$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$$

Verified.

(vi)  $16135 \div 875$

$$\begin{array}{r} 18 \\ 875 \overline{) 16135} \\ \underline{- 875} \phantom{00} \\ 7385 \phantom{00} \\ \underline{- 7000} \phantom{00} \\ 385 \end{array}$$

Quotient = 18 and Remainder = 385

$$\begin{aligned} \text{Check: Divisor} \times \text{Quotient} + \text{Remainder} &= 875 \times 18 + 385 \\ &= 16135 \\ &= \text{Dividend} \end{aligned}$$

$$\therefore \text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$$

Verified.

Q3

**Answer :**

(i)  $65007 \div 1 = 65007$

(ii)  $0 \div 879 = 0$

(iii)  $981 + 5720 \div 10$

$= 981 + (5720 \div 10)$

$= 981 + 572$

$= 1553$

(Following DMAS property)

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

$= 1507 - 25$

$= 1482$

(Following BODMAS property)

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

$= 32277 \div (609)$

$= 53$

(Following BODMAS property)

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

$= 1 - 1$

$= 0$

(Following BODMAS property)

Q4

**Answer :**

Given:  $n \div n = n$

$$\Rightarrow \frac{n}{n} = n$$

$$\Rightarrow n = n^2$$

i.e., the whole number  $n$  is equal to  $n^2$ .

$\therefore$  The given whole number must be 1.

Q5

**Answer :**

Let  $x$  and  $y$  be the two numbers.

Product of the two numbers =  $x \times y = 504347$

If  $x = 317$ , we have:

$$317 \times y = 504347$$

$$\Rightarrow y = 504347 \div 317$$

$$\begin{array}{r} 1591 \\ 317 \overline{)504347} \\ \underline{317} \phantom{00} \\ 1873 \phantom{00} \\ \underline{-1585} \phantom{00} \\ 2884 \phantom{00} \\ \underline{-2853} \phantom{00} \\ 317 \phantom{00} \\ \underline{-317} \phantom{00} \\ 0 \end{array}$$

$$y = 1591$$

$\therefore$  The other number is 1591.

Q6

**Answer :**

Dividend = 59761, quotient = 189, remainder = 37 and divisor = ?

Dividend = divisor  $\times$  quotient + remainder

$$\Rightarrow 59761 = \text{divisor} \times 189 + 37$$

$$\Rightarrow 59761 - 37 = \text{divisor} \times 189$$

$$\Rightarrow 59724 = \text{divisor} \times 189$$

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

$$\begin{array}{r} 316 \\ 189 \overline{)59724} \\ \underline{-567} \phantom{00} \\ 302 \phantom{00} \\ \underline{-189} \phantom{00} \\ 1134 \phantom{00} \\ \underline{-1134} \phantom{00} \\ 0 \end{array}$$

Hence, divisor = 316

Q7

**Answer :**

Here, Dividend = 55390, Divisor = 299 and Remainder = 75

We have to find the quotient.

Now, Dividend = Divisor  $\times$  Quotient + Remainder

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

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

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

$$\Rightarrow \text{Quotient} = 55315 \div 299$$

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

Hence, quotient = 185

Q8

**Answer :**

First, we will divide 13601 by 87.

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

Remainder = 29

So, 29 must be subtracted from 13601 to get a number exactly divisible by 87.

$$\text{i.e., } 13601 - 29 = 13572$$

Now, we have:

$$\begin{array}{r} 156 \\ 87 \overline{) 13572} \\ \underline{- 87} \phantom{00} \\ 487 \phantom{00} \\ \underline{- 435} \phantom{00} \\ 522 \phantom{00} \\ \underline{- 522} \phantom{00} \\ 0 \end{array}$$

$\therefore$  29 must be subtracted from 13601 to make it divisible by 87.

Q9

**Answer :**

First, we will divide 1056 by 23.

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

Required number =  $23 - 21 = 2$

So, 2 must be added to 1056 to make it exactly divisible by 23.

i.e.,  $1056 + 2 = 1058$

Now, we have:

$$\begin{array}{r} 46 \\ 23 \overline{)1058} \\ \underline{-92} \phantom{00} \\ 138 \\ \underline{-138} \phantom{00} \\ 0 \end{array}$$

$\therefore$  1058 is exactly divisible by 23.

Q10

**Answer :**

We have to find the largest four digit number divisible by 16 .

The largest four-digit number = 9999

Therefore, dividend = 9999

Divisor = 16

$$\begin{array}{r} 62 \\ 16 \overline{)9999} \\ \underline{-96} \phantom{00} \\ 39 \\ \underline{-32} \phantom{00} \\ 79 \\ \underline{-64} \phantom{00} \\ 15 \end{array}$$

Here, we get remainder = 15

Therefore, 15 must be subtracted from 9999 to get the largest four digit number that is divisible by 16.

i.e.,  $9999 - 15 = 9984$

Thus, 9984 is the largest four-digit number that is divisible by 16.

Q11

**Answer :**

Largest five-digit number = 99999

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

Dividend = 99999, Divisor = 653, Quotient = 153 and Remainder = 90

Check: Divisor  $\times$  Quotient + Remainder

$$= 653 \times 153 + 90$$

$$= 99909 + 90$$

$$= 99999$$

$$= \text{Dividend}$$

$\therefore$  Dividend = Divisor  $\times$  Quotient + Remainder

Verified.

Q12

**Answer :**

Least six-digit number = 100000

Here, dividend = 100000 and divisor = 83

$$\begin{array}{r} 1204 \\ 83 \overline{) 99932} \\ \underline{83} \phantom{00} \\ 169 \phantom{00} \\ \underline{166} \phantom{00} \\ 332 \phantom{00} \\ \underline{332} \phantom{00} \\ 0 \end{array}$$

In order to find a number exactly divisible by 83, we have to subtract the remainder from the dividend.

i.e.,  $100000 - 68 = 99932$

So, 99932 is the least six-digit number exactly divisible by 83.

$$\begin{array}{r} 1204 \\ 83 \overline{) 99932} \\ \underline{-83} \phantom{00} \\ 169 \phantom{00} \\ \underline{-166} \phantom{00} \\ 332 \phantom{00} \\ \underline{-332} \phantom{00} \\ 0 \end{array}$$

Q13

**Answer :**

Cost of 1 dozen bananas = Rs 29

Number of dozens purchased for Rs 1392 =  $1392 \div 29$

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

Hence, 48 dozen of bananas can be purchased with Rs. 1392.

Q14

**Answer :**

Number of trees planted in 157 rows = 19625

Trees planted in 1 row =  $19625 \div 157$

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

$\therefore$  125 trees are planted in each row.

Q15

**Answer :**

Population of the town = 517530

$\left(\frac{1}{15}\right)$  of the population is reported to be literate, i.e.,  $\left(\frac{1}{15}\right) \times 517530 = 517530 \div 15$

$$\begin{array}{r} 34502 \\ 15 \overline{) 517530} \\ \underline{45} \phantom{00} \\ 67 \phantom{00} \\ \underline{-60} \phantom{00} \\ 75 \phantom{00} \\ \underline{-75} \phantom{00} \\ 030 \phantom{00} \\ \underline{-30} \phantom{00} \\ 0 \end{array}$$

$\therefore$  There are 34502 illiterate persons in the given town.

Q16

**Answer :**

Cost price of 23 colour TV sets = Rs 5,70,055

Cost price of 1 TV set = Rs  $570055 \div 23$

$$\begin{array}{r} 24785 \\ 23 \overline{) 570055} \\ \underline{46} \phantom{00} \\ 110 \phantom{00} \\ \underline{-92} \phantom{00} \\ 180 \phantom{00} \\ \underline{-161} \phantom{00} \\ 195 \phantom{00} \\ \underline{-184} \phantom{00} \\ 115 \phantom{00} \\ \underline{-115} \phantom{00} \\ 0 \end{array}$$

$\therefore$  The cost price of one TV set is Rs 24,785.

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Q1

**Answer :**

(b) 0

The smallest whole number is 0.

Q2

**Answer :**

(d) 1008

(a)

$$\begin{array}{r} 113 \\ 9 \overline{)1018} \\ \underline{-9} \phantom{00} \\ 11 \phantom{00} \\ \underline{-9} \phantom{00} \\ 28 \phantom{00} \\ \underline{-27} \phantom{00} \\ 1 \phantom{00} \end{array}$$

Hence, 1018 is not exactly divisible by 9.

(b)

$$\begin{array}{r} 114 \\ 9 \overline{)1026} \\ \underline{-9} \phantom{00} \\ 12 \phantom{00} \\ \underline{-9} \phantom{00} \\ 36 \phantom{00} \\ \underline{-36} \phantom{00} \\ 1 \phantom{00} \end{array}$$

Hence, 1026 is exactly divisible by 9.

(c)

$$\begin{array}{r} 112 \\ 9 \overline{)1009} \\ \underline{-9} \phantom{00} \\ 10 \phantom{00} \\ \underline{-9} \phantom{00} \\ 19 \phantom{00} \\ \underline{-18} \phantom{00} \\ 1 \phantom{00} \end{array}$$

Hence, 1009 is not exactly divisible by 9.

(d)

$$\begin{array}{r} 112 \\ 9 \overline{)1008} \\ \underline{-9} \phantom{00} \\ 10 \phantom{00} \\ \underline{-9} \phantom{00} \\ 18 \phantom{00} \\ \underline{-18} \phantom{00} \\ 0 \phantom{00} \end{array}$$

Hence, 1008 is exactly divisible by 9.

(b) and (d) are exactly divisible by 9, but (d) is the least number which is exactly divisible by 9.

(b)

$$\begin{array}{r} 62498 \\ 16 \overline{)999982} \\ \underline{-96} \phantom{00} \\ 39 \phantom{00} \\ \underline{-32} \phantom{00} \\ 79 \phantom{00} \\ \underline{-64} \phantom{00} \\ 158 \phantom{00} \\ \underline{-144} \phantom{00} \\ 142 \phantom{00} \\ \underline{-128} \phantom{00} \\ 14 \phantom{00} \end{array}$$

Hence, 999982 is not exactly divisible by 16.

(c)

$$\begin{array}{r} 62499 \\ 16 \overline{)999984} \\ \underline{-96} \phantom{00} \\ 39 \phantom{00} \\ \underline{-32} \phantom{00} \\ 79 \phantom{00} \\ \underline{-64} \phantom{00} \\ 158 \phantom{00} \\ \underline{-144} \phantom{00} \\ 144 \phantom{00} \\ \underline{-144} \phantom{00} \\ 0 \phantom{00} \end{array}$$

Hence, 999984 is exactly divisible by 16.



(d)

$$\begin{array}{r} 62497 \\ 16 \overline{) 999964} \\ \underline{-96} \phantom{00} \\ 39 \phantom{00} \\ \underline{-32} \phantom{00} \\ 79 \phantom{00} \\ \underline{-64} \phantom{00} \\ 156 \phantom{00} \\ \underline{-144} \phantom{00} \\ 124 \phantom{00} \\ \underline{-112} \phantom{00} \\ 12 \end{array}$$

Hence, 999964 is not exactly divisible by 16.

The largest six-digit number which is exactly divisible by 16 is 999984.

Q4

**Answer :**

(c) 8

Here we have to tell what least number should be subtracted from 10004 to get a number exactly divisible by 12

So, we will first divide 10004 by 12.

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

Remainder = 8

So, 8 should be subtracted from 10004 to get the number exactly divisible by 12.

i.e.,  $10004 - 8 = 9996$

$$\begin{array}{r} 833 \\ 12 \overline{) 9996} \\ \underline{-96} \phantom{00} \\ 39 \phantom{00} \\ \underline{-36} \phantom{00} \\ 36 \phantom{00} \\ \underline{-36} \phantom{00} \\ 0 \end{array}$$

Hence, 9996 is exactly divisible by 12.

Q5

**Answer :**

(a) 18

Here, we have to tell that what least number must be added to 10056 to get a number exactly divisible by 23

So, first we will divide 10056 by 23

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

Remainder = 5

Required number =  $23 - 5 = 18$

So, 18 must be added to 10056 to get a number exactly divisible by 23.

i.e.,  $10056 + 18 = 10074$

$$\begin{array}{r} 438 \\ 23 \overline{)10074} \\ \underline{-92} \phantom{00} \\ 87 \phantom{00} \\ \underline{-69} \phantom{00} \\ 184 \phantom{00} \\ \underline{-184} \phantom{00} \\ 0 \end{array}$$

Hence, 10074 is exactly divisible by 23.

Q6

**Answer :**

(d) 462

(a)

$$\begin{array}{r} 4 \\ 11 \overline{)450} \\ \underline{-44} \phantom{00} \\ 10 \end{array}$$

Hence, 450 is not divisible by 11.

(b)

$$\begin{array}{r} 41 \\ 11 \overline{)451} \\ \underline{-44} \phantom{00} \\ 11 \phantom{00} \\ \underline{-11} \phantom{00} \\ 0 \end{array}$$

Hence, 451 is divisible by 11.

(c)

$$\begin{array}{r} 41 \\ 11 \overline{)460} \\ \underline{44} \phantom{0} \\ 20 \\ \underline{-11} \\ 9 \end{array}$$

Hence, 460 is not divisible by 11.

(d)

$$\begin{array}{r} 42 \\ 11 \overline{)462} \\ \underline{44} \phantom{0} \\ 22 \\ \underline{-22} \\ 0 \end{array}$$

Hence, 462 is divisible by 11.

Here, the numbers given in options (b) and (d) are divisible by 11. However, we want a whole number nearest to 457 which is divisible by 11.

So, 462 is whole number nearest to 457 and divisible by 11.

Q7

**Answer :**

(c) 184

$$\begin{aligned} \text{Number of whole numbers} &= (1203 - 1018) - 1 \\ &= 185 - 1 \\ &= 184 \end{aligned}$$

Q8

**Answer :**

(b) 521

Divisor = 46

Quotient = 11

Remainder = 15

$$\begin{aligned} \text{Dividend} &= \text{divisor} \times \text{quotient} + \text{remainder} \\ &= 46 \times 11 + 15 \\ &= 506 + 15 \\ &= 521 \end{aligned}$$

Q9

**Answer :**

(c) 12

Dividend = 199

Quotient = 16

Remainder = 7

According to the division algorithm, we have:

Dividend = divisor  $\times$  quotient + remainder

$$\Rightarrow 199 = \text{divisor} \times 16 + 7$$

$$\Rightarrow 199 - 7 = \text{divisor} \times 16$$

$$\Rightarrow \text{Divisor} = 192 \div 16$$

$$\begin{array}{r} 12 \\ 16 \overline{)192} \\ \underline{16} \phantom{0} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

Q10

**Answer :**

(a) 11023

$$\begin{aligned}7589 - ? &= 3434 \\ \Rightarrow 7589 - x &= 3434 \\ \Rightarrow x &= 7589 + 3434 \\ \Rightarrow x &= 11023\end{aligned}$$

Q11

**Answer :**

(c) 58113

$$\begin{aligned}587 \times 99 \\ &= 587 \times (100 - 1) \\ &= 587 \times 100 - 587 \times 1 \quad \text{[Using distributive property of multiplication over subtraction]} \\ &= 58700 - 587 \\ &= 58113\end{aligned}$$

Q12

**Answer :**

(c) 53800

$$\begin{aligned}4 \times 538 \times 25 \\ &= (4 \times 25) \times 538 \\ &= 100 \times 538 \\ &= 53800\end{aligned}$$

Q13

**Answer :**

(c) 2467900

By using the distributive property, we have:

$$\begin{aligned}24679 \times 92 + 24679 \times 8 \\ &= 24679 \times (92 + 8) \\ &= 24679 \times 100 \\ &= 2467900\end{aligned}$$

Q14

**Answer :**

(a) 1625000

By using the distributive property, we have:

$$\begin{aligned}1625 \times 1625 - 1625 \times 625 \\ &= 1625 \times (1625 - 625) \\ &= 1625 \times 1000 \\ &= 1625000\end{aligned}$$

Q15

**Answer :**

(c) 156800

By using the distributive property, we have:

$$\begin{aligned}1568 \times 185 - 1568 \times 85 \\ &= 1568 \times (185 - 85) \\ &= 1568 \times 100 \\ &= 156800\end{aligned}$$

Q16

**Answer :**

(c) 20

$$\begin{aligned}(888 + 777 + 555) &= (111 \times ?) \\ \Rightarrow (888 + 777 + 555) &= 111 \times (8 + 7 + 5) \quad [\text{By taking 111 common}] \\ &= 111 \times (20) = 2220\end{aligned}$$

Q17

**Answer :**

(b) an even number

The sum of two odd numbers is an even number.

Example:  $5 + 3 = 8$

Q18

**Answer :**

(a) an odd number

The product of two odd numbers is an odd number.

Example:  $5 \times 3 = 15$

Q19

**Answer :**

(d) none of these

Given:  $a$  is a whole number such that  $a + a = a$ .

If  $a = 1$ , then  $1 + 1 = 2 \neq 1$

If  $a = 2$ , then  $2 + 2 = 4 \neq 2$

If  $a = 3$ , then  $3 + 3 = 6 \neq 3$

Q20

**Answer :**

(b) 9999

Predecessor of 10000 =  $10000 - 1 = 9999$

Q21

**Answer :**

(b) 1002

Successor of 1001 =  $1001 + 1 = 1002$

Q22

**Answer :**

(b) 2

The smallest even whole number is 2. Zero (0) is neither an even number nor an odd number.