Chapter – 4
Multiplication and Division

Lesson-4 : Multiplication and Division

Exercise-1

1. (a) (iii) Money with George $= ₹\,500 \times 65$

$= ₹\,5 \times 65 \times 100$

$= ₹\,32500$

$$\begin{array}{r} \overset{②}{6\ 5} \\ \times\ 5 \\ \hline 3\ 2\ 5 \\ \hline \end{array}$$

(b) (iii) Battery life $= 2000$ hours

$= (2000 \div 24)$ days

On dividing 2000 by 24, we get 83 as the quotient.

So, the battery life is 83 days.

$$\begin{array}{r} 83 \\ 24\overline{)\ 2000} \\ -\ 192 \\ \hline 80 \\ -\ 72 \\ \hline 8 \\ \hline \end{array}$$

2. (a)
$$\begin{array}{r} 59 \\ \times\ 33 \\ \hline 177 \\ +1770 \\ \hline 1947 \end{array}$$

(b)
$$\begin{array}{r} \overset{5}{\textcircled{}}\ \\ 207 \\ \times\ 8 \\ \hline 1656 \end{array}$$

(c)
$$\begin{array}{r} \overset{2\,3}{\textcircled{}}\ \\ 235 \\ \times\ 7 \\ \hline 1645 \end{array}$$

(d)
$$\begin{array}{r} \overset{1\,3}{\textcircled{}}\ \\ 927 \\ \times\ 5 \\ \hline 4635 \end{array}$$

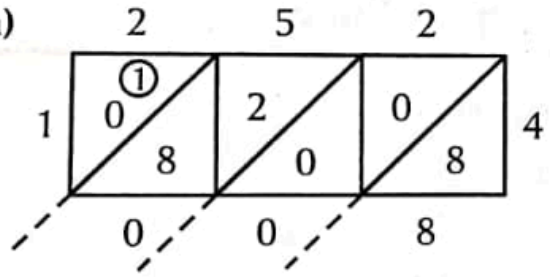
3. (a)
$$\begin{array}{r} 24 \\ 4\overline{)96} \\ -8 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$
Q = 24
R = 0

(b)
$$\begin{array}{r} 16 \\ 6\overline{)97} \\ -6 \\ \hline 37 \\ -36 \\ \hline 1 \end{array}$$
Q = 16
R = 1

(c)
$$\begin{array}{r} 247 \\ 3\overline{)743} \\ -6 \\ \hline 14 \\ -12 \\ \hline 23 \\ -21 \\ \hline 2 \end{array}$$
Q = 247
R = 2

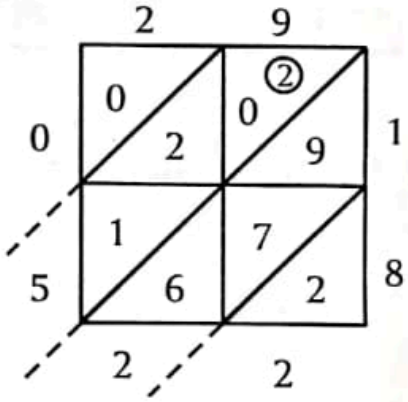
(d)
$$\begin{array}{r} 160 \\ 5\overline{)804} \\ -5 \\ \hline 30 \\ -30 \\ \hline 04 \\ -0 \\ \hline 4 \end{array}$$
Q = 160
R = 4

4. (a)



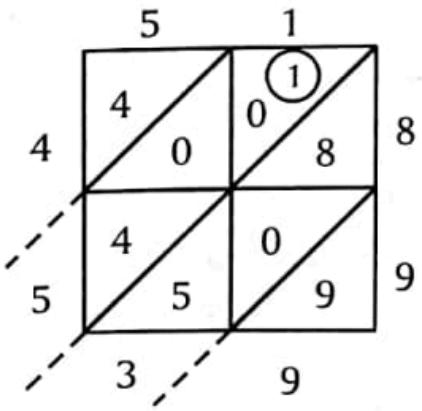
$\therefore$ $252 \times 4 = 1008$

(b)



$\therefore$ $29 \times 18 = 522$

(c)



$\therefore$ $51 \times 89 = 4539$

Exercise-2

1.
$$\begin{array}{r} 2311 \\ \times\ \ 2 \\ \hline 4622 \end{array}$$

2.
$$\begin{array}{r} 1310 \\ \times\ \ 3 \\ \hline 3930 \end{array}$$

3.
$$\begin{array}{r} 1221 \\ \times\ \ 4 \\ \hline 4884 \end{array}$$

4. ②
1015
× 5
5075

5. ②④
1138
× 6
6828

6. ③③
1981
× 4
7924

Exercise-3

1.
142
× 12
284
+1420
1704

2.
213
× 23
639
+4260
4899

3.
202
× 11
202
+2020
2222

4.
332
× 13
996
+3320
4316

5.
201
× 34
804
+6030
6834

6.
204
× 22
408
+4080
4488

Fun Time (Page 41)

A : $48 \times 5 = 240$
B : $178 \times 7 = 1246$
H : $27 \times 25 = 675$
I : $11 \times 80 = 880$
L : $84 \times 9 = 756$
N : $62 \times 18 = 1116$
O : $97 \times 35 = 3395$
R : $912 \times 8 = 7296$
T : $27 \times 100 = 2700$

H	O	T		A	I	R
675	3395	2700		240	880	7296

B	A	L	L	O	O	N
1246	240	756	756	3395	3395	1116

Exercise-4

1.
378
× 83
1134
+30240
31374

2.
836
× 29
7524
+16720
24244

3.
278
× 31
278
+8340
8618

4.
2455
× 18
19640
+24550
44190

5.
1689
× 12
3378
+16890
20268

6.
3703
× 12
7406
+37030
44436

Exercise-5

1.
$$\begin{array}{r} 819 \\ \times\ 208 \\ \hline 6552 \\ 0000 \\ +163800 \\ \hline 170352 \end{array}$$

2.
$$\begin{array}{r} 648 \\ \times\ 227 \\ \hline 4536 \\ 12960 \\ +129600 \\ \hline 147096 \end{array}$$

3.
$$\begin{array}{r} 555 \\ \times\ 145 \\ \hline 2775 \\ 22200 \\ +55500 \\ \hline 80475 \end{array}$$

4.
$$\begin{array}{r} 732 \\ \times\ 198 \\ \hline 5856 \\ 65880 \\ +\ 73200 \\ \hline 144936 \end{array}$$

5.
$$\begin{array}{r} 245 \\ \times\ 155 \\ \hline 1225 \\ 12250 \\ +\ 24500 \\ \hline 37975 \end{array}$$

6.
$$\begin{array}{r} 2154 \\ \times\ 124 \\ \hline 8616 \\ 43080 \\ +215400 \\ \hline 267096 \end{array}$$

7.
$$\begin{array}{r} 5135 \\ \times\ 431 \\ \hline 5135 \\ 154050 \\ +\ 2054000 \\ \hline 2213185 \end{array}$$

8.
$$\begin{array}{r} 7239 \\ \times\ 372 \\ \hline 14478 \\ 506730 \\ +\ 2171700 \\ \hline 2692908 \end{array}$$

9.
$$\begin{array}{r} 4967 \\ \times\ 922 \\ \hline 9934 \\ 99340 \\ +\ 4470300 \\ \hline 4579574 \end{array}$$

10.
$$\begin{array}{r} 6854 \\ \times\ 372 \\ \hline 13708 \\ 479780 \\ +\ 2056200 \\ \hline 2549688 \end{array}$$

11.
$$\begin{array}{r} 9807 \\ \times\ 533 \\ \hline 29421 \\ 294210 \\ +\ 4903500 \\ \hline 5227131 \end{array}$$

12.
$$\begin{array}{r} 4912 \\ \times\ 236 \\ \hline 29472 \\ 147360 \\ +\ 982400 \\ \hline 1159232 \end{array}$$

Exercise-6

1. **(a)** (ii) 8

(b) (iv) $6359 \times 3000 = 6359 \times 3 \times 1000 = 19077 \times 1000 = 19077000$

2. **(a)** $178 \times 40 = (178 \times 4) \times 10 = 712 \times 10 = 7120$

(b) $861 \times 900 = (861 \times 9) \times 100 = 7749 \times 100 = 774900$

(c) $9297 \times 5000 = (9297 \times 5) \times 1000 = 46485 \times 1000 = 46485000$

3. **(a)** 0 **(b)** 1 **(c)** 7125 **(d)** 8175

4. **(a)** $72 \times 25 = 72 \times 100 \times \frac{1}{4} = 7200 \times \frac{1}{4} = 1800$

(b) $1792 \times 5 = 1792 \times 10 \times \frac{1}{2} = 17920 \times \frac{1}{2} = 8960$

(c) $971 \times 50 = 971 \times 100 \times \frac{1}{2} = 97100 \times \frac{1}{2} = 48550$

(d) $284 \times 5 = 284 \times 10 \times \frac{1}{2} = 2840 \times \frac{1}{2} = 1420$

(e) $546 \times 25 = 546 \times 100 \times \frac{1}{4} = 54600 \times \frac{1}{4} = 13650$

(f) $1242 \times 50 = 1242 \times 100 \times \frac{1}{2} = 124200 \times \frac{1}{2} = 62100$

5. **(a)** $58 \times 107 = 58 \times (100 + 7) = 58 \times 100 + 58 \times 7$
$= 5800 + 406 = 6206$

(b) $83 \times 96 = 83 \times (100 - 4) = 83 \times 100 - 83 \times 4$
$= 8300 - 332 = 7968$

(c) $42 \times 172 = 42 \times (100 + 70 + 2) = 42 \times 100 + 42 \times 70 + 42 \times 2$
$= 4200 + (42 \times 7) \times 10 + 84$
$= 4200 + 294 \times 10 + 84$
$= 4200 + 2940 + 84 = 7224$

(d) $18 \times 3065 = 18 \times (3000 + 60 + 5) = 18 \times 3000 + 18 \times 60 + 18 \times 5$
$= 54000 + 1080 + 90 = 55170$

(e) $67 \times 99 = 67 \times (100 - 1) = 67 \times 100 - 67 \times 1 = 6700 - 67$
$= 6633$

(f) $73 \times 998 = 73 \times (1000 - 2) = 73 \times 1000 - 73 \times 2$
$= 73000 - 146 = 72854$

6. Greatest 4-digit number = 9999

Greatest 3-digit number = 999

Required product = $9999 \times 999 = 9999 \times (1000 - 1)$

$= 9999 \times 1000 - 9999$

$= 9999000 - 9999 = 9989001$

Puzzle (Page 44)

$532 = (5 \times 3)(5 \times 2)(3 \times 2) = 151006$

$924 = (9 \times 2)(9 \times 4)(2 \times 4) = 183608$

$863 = (8 \times 6)(8 \times 3)(6 \times 3) = 482418$

$545 = (5 \times 4)(5 \times 5)(4 \times 5) = 202520$

So, $955 = (9 \times 5)(9 \times 5)(5 \times 5) = 454525$

Exercise-7

1. (a) (i) Cost of a chair = ₹ 485

∴ Total cost of 24 chairs = ₹ 485 × 24

= ₹ 11640

Thus, the total cost of 24 chairs is ₹ 11,640.

```
  485
×  24
-----
 1940
+9700
-----
11640
-----
```

(b) (ii) Monthly fee per student = ₹ 2550

Yearly fee per student = ₹ 2550 × 12

= ₹ 30,600

Hence, each student will pay ₹ 30,600 as fees in a year.

```
 2550
×  12
-----
 5100
+25500
-----
30600
-----
```

(c) (iii) Number of days in one year = 365

Number of hours in one day = 24

Number of hours in one year = 365 × 24

= 8760

Hence, there are 8760 hours in one year.

```
  365
×  24
-----
 1460
+7300
-----
 8760
-----
```

(d) (iv) Milk booth sells 448 litres of milk in a day.

Quantity of milk sold in a year

= 365 × 448 litres = 1,63,520 litres

Thus, the milk booth sells 1,63,520 *l* of milk in a year.

```
   448
×  365
-------
  2240
 26880
+134400
-------
163520
-------
```

2. Number of toys produced in a week = 3452

Number of weeks in one year = 52

Number of weeks in two years = 52 × 2

= 104

Total number of toys produced in two years

= 3452 × 104

= 3,59,008

```
  3452
 × 104
------
 13808
 00000
+34520 0
------
 359008
```

Thus, the factory will produce 3,59,008 toys in two years.

3. Number of pages in one book = 328

Number of pages in 7125 books = 7125 × 328

= 23,37,000

```
  7125
 × 328
------
 57000
 14250 0
+213750 0
------
 233700 0
```

Hence, 23,37,000 pages were printed.

4. Number of employees = 373

Bonus amount per employee = ₹ 8040

Total bonus amount = ₹ 8040 × 373

= ₹ 29,98,920

```
  8040
 × 373
------
 24120
 562800
+2412000 0
------
 2998920
```

Exercise-8

1. 358 is rounded off to the nearest hundreds as 400.

   326 is rounded off to the nearest hundreds as 300.

   Estimated product = 400 × 300 = 120000

2. 2250 is rounded off to the nearest thousands as 2000.

   65 is rounded off to the nearest tens as 70.

   Estimated product = 2000 × 70 = 140000

3. 3998 is rounded off to the nearest thousands as 4000.

   41 is rounded off to the nearest tens as 40.

   Estimated product = 4000 × 40 = 160000

4. 341 is rounded off to the nearest hundreds as 300.

   267 is rounded off to the nearest hundreds as 300.

   Estimated product = 300 × 300 = 90000

5. 279 is rounded off to the nearest hundreds as 300.

79 is rounded off to the nearest tens as 80.

Estimated product = $300 \times 80 = 24000$

6. 699 is rounded off to the nearest hundreds as 700.

499 is rounded off to the nearest hundreds as 500.

Estimated product = $700 \times 500 = 350000$

7. 499 is rounded off to the nearest hundreds as 500.

501 is rounded off to the nearest hundreds as 500.

Estimated product = $500 \times 500 = 250000$

8. 8985 is rounded off to the nearest thousands as 9000.

74 is rounded off to the nearest tens as 70.

Estimated product = $9000 \times 70 = 630000$

9. 3636 is rounded off to the nearest thousands as 4000.

63 is rounded off to the nearest tens as 60.

Estimated product = $4000 \times 60 = 240000$

Exercise-9

1.

```
      531
   9 ) 4787
     -45
      28
     -27
      17
      -9
       8
```

Q = 531, R = 8

Checking :

Divisor × Quotient + Remainder

= 9 × 531 + 8

= 4779 + 8

= 4787

= Dividend

```
  5 3 1
    × 9
-------
  4 7 9
-------
```

2.

```
      2310
   6 ) 13865
     -12
      18
     -18
      06
      -6
       05
       -0
        5
```

Q = 2310, R = 5

Checking :

Divisor × Quotient + Remainder

= 6 × 2310 + 5

= 13860 + 5

= 13865

= Dividend

```
  2 3 1 0
      × 6
---------
  1 3 8 6 0
---------
```

3.

$$
\begin{array}{r}
6979 \\
9\overline{)62817} \\
-54 \\
\hline
88 \\
-81 \\
\hline
71 \\
-63 \\
\hline
87 \\
-81 \\
\hline
6
\end{array}
$$

Q = 6979, R = 6

Checking :

Divisor × Quotient + Remainder

= 9 × 6979 + 6

= 62811 + 6

= 62817

= Dividend

$$
\begin{array}{r}
6979 \\
\times \quad 9 \\
\hline
62811
\end{array}
$$

4.

$$
\begin{array}{r}
29 \\
12\overline{)348} \\
-24 \\
\hline
108 \\
-108 \\
\hline
0
\end{array}
$$

Q = 29, R = 0

Checking :

Divisor × Quotient + Remainder

= 12 × 29 + 0

= 348

= Dividend

$$
\begin{array}{r}
29 \\
\times \quad 12 \\
\hline
58 \\
+290 \\
\hline
348
\end{array}
$$

5.

$$
\begin{array}{r}
35 \\
17\overline{)607} \\
-51 \\
\hline
97 \\
-85 \\
\hline
12
\end{array}
$$

Q = 35, R = 12

Checking :

Divisor × Quotient + Remainder

= 17 × 35 + 12

= 595 + 12

= 607

= Dividend

$$
\begin{array}{r}
35 \\
\times \quad 17 \\
\hline
245 \\
+350 \\
\hline
595
\end{array}
$$

6.

$$
\begin{array}{r}
50 \\
15\overline{)759} \\
-75 \\
\hline
09 \\
-0 \\
\hline
9
\end{array}
$$

Q = 50, R = 9

Checking :

Divisor × Quotient + Remainder

= 15 × 50 + 9

= 750 + 9

= 759

= Dividend

$$
\begin{array}{r}
50 \\
\times \quad 15 \\
\hline
250 \\
+500 \\
\hline
750
\end{array}
$$

7.

$$
\begin{array}{r}
204 \\
21\overline{)4287} \\
-42 \\
\hline
08 \\
-0 \\
\hline
87 \\
-84 \\
\hline
3
\end{array}
$$

Q = 204, R = 3

Checking :

Divisor × Quotient + Remainder

= 21 × 204 + 3

= 4284 + 3

= 4287

= Dividend

$$
\begin{array}{r}
204 \\
\times \quad 21 \\
\hline
204 \\
+4080 \\
\hline
4284
\end{array}
$$

8.

```
      273
34 ) 9289
    -68
     248
    -238
      109
     -102
        7
```

Q = 273, R = 7

Checking :

Divisor × Quotient + Remainder

= 34 × 273 + 7

= 9282 + 7

= 9289

= Dividend

```
  2 7 3
  × 3 4
 1 0 9 2
+8 1 9 0
 9 2 8 2
```

9.

```
      246
36 ) 8888
    -72
     168
    -144
      248
     -216
       32
```

Q = 246, R = 32

Checking :

Divisor × Quotient + Remainder

= 36 × 246 + 32

= 8856 + 32

= 8888

= Dividend

```
  2 4 6
  × 3 6
 1 4 7 6
+7 3 8 0
 8 8 5 6
```

10.

```
      188
42 ) 7896
    -42
     369
    -336
      336
     -336
        0
```

Q = 188, R = 0

Checking :

Divisor × Quotient + Remainder

= 42 × 188 + 0

= 7896

= Dividend

```
  1 8 8
  × 4 2
  3 7 6
+7 5 2 0
 7 8 9 6
```

11.

```
      1456
29 ) 42238
    -29
     132
    -116
      163
     -145
       188
      -174
        14
```

Q = 1456, R = 14

Checking :

Divisor × Quotient + Remainder

= 29 × 1456 + 14

= 42224 + 14

= 42238

= Dividend

```
  1 4 5 6
  × 2 9
 1 3 1 0 4
+2 9 1 2 0
 4 2 2 2 4
```

12.

$$
\begin{array}{r}
1754 \\
38\overline{)\,66666} \\
-38 \\
\hline
286 \\
-266 \\
\hline
206 \\
-190 \\
\hline
166 \\
-152 \\
\hline
14
\end{array}
$$

Q = 1754, R = 14

Checking :

Divisor × Quotient + Remainder

= 38 × 1754 + 14

= 66652 + 14

= 66666

= Dividend

$$
\begin{array}{r}
1754 \\
\times\ 38 \\
\hline
14032 \\
+52620 \\
\hline
66652
\end{array}
$$

Exercise-10

1. (a) (ii) Dividend = Divisor × Quotient + Remainder

= 35 × 22 + 14 = 770 + 14 = 784

Thus, the required number is 784.

(b) (iii) Dividend = Divisor × Quotient + Remainder

3699 = Divisor × 231 + 3

⇒ 3699 − 3 = Divisor × 231

⇒ 3696 = Divisor × 231

⇒ Divisor = 3696 ÷ 231 = 16

Thus, the required number is 16.

2. (a) 12547 **(b)** 1 **(c)** 0 **(d)** 0

3.

	By 10		By 100		By 1000	
(a)	8540	0	854	0	85	400
(b)	82160	0	8216	0	821	600
(c)	97480	0	9748	0	974	800
(d)	9600	0	960	0	96	0
(e)	48600	0	4860	0	486	0
(f)	77000	0	7700	0	770	0
(g)	336000	0	33600	0	3360	0
(h)	987645	0	98764	50	9876	450

Exercise-11

1. (a) (i) Number of plants planted in 46 days = 2,77,196

Number of plants planted each day

= 2,77,196 ÷ 46 = 6026

```
      6026
46 ) 277196
    -276
     ----
       11
       -0
       --
      119
      -92
      ---
      276
     -276
     ----
        0
```

(b) (ii) Cost of 18 books = ₹ 9972

∴ Cost of one book = ₹ 9972 ÷ 18

= ₹ 554

```
      554
18 ) 9972
    -90
     --
      97
     -90
     ---
      72
     -72
     ---
       0
```

(c) (iii) Weight of 38 bags = 2470 kg

∴ Weight of one bag = (2470 ÷ 38) kg

= 65 kg

```
      65
38 ) 2470
    -228
     ---
     190
    -190
     ---
       0
```

(d) (iv) Number of buses required $= \frac{4875}{75}$

= 65

```
      65
75 ) 4875
    -450
     ---
     375
    -375
     ---
       0
```

(e) (iv) Product of two numbers = 4560

One of the two numbers = 15

The other number = 4560 ÷ 15 = 304

```
      304
15 ) 4560
    -45
     --
      06
      -0
      --
      60
     -60
     ---
       0
```

2. The greatest 7-digit number = 9999999

The greatest 2-digit number = 99

```
      101010
   ┌─────────
99 ) 9999999
     -99
     ----
      09
      -0
      --
      99
     -99
     ---
      09
      -0
      --
      99
     -99
     ---
      09
      -0
      --
       9
```

Checking :

Divisor × Quotient + Remainder

= 99 × 101010 + 9

= 9999990 + 9

= 9999999

= Dividend

```
  101010
×     99
--------
 909090
+9090900
--------
 9999990
--------
```

Q = 101010, R = 9

3. Total number of balls = 5255

Number of boxes to be filled = 34

Number of balls in each box = 5255 ÷ 34

On dividing 5255 by 34, we get 154 as the quotient and 19 as the remainder.

Thus, 154 balls will be filled in each box and 19 balls will be left out.

```
      154
   ┌──────
34 ) 5255
     -34
     ---
      185
     -170
     ----
       155
      -136
      ----
        19
```

4. The greatest 5-digit number is 99999.

99999 ÷ 14 gives 7142 as the quotient and 11 as the remainder.

Now, 99999 – 11 = 99988

99988 is exactly divisible by 14.

So, the greatest 5-digit number exactly divisible by 14 is 99988.

```
      7142
   ┌──────
14 ) 99999
     -98
     ---
      19
     -14
     ---
      59
     -56
     ---
      39
     -28
     ---
      11
```

5. Number of chairs that can be bought = 3500 ÷ 67

3500 ÷ 67 gives 52 as the quotient and 16 as the remainder.

So, I can buy 52 chairs and ₹ 16 are left with me.

```
      52
   ┌──────
67 ) 3500
     -335
     ----
      150
     -134
     ----
       16
```

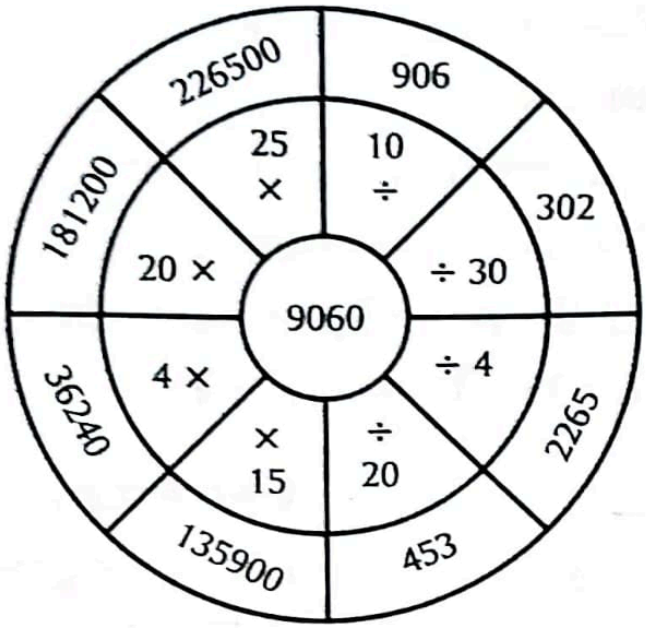
6. Number of years in 31755 days
= (31755 ÷ 365) = 87
So, 87 years will make 31755 days.

$$\begin{array}{r} 87 \\ 365\overline{)\,31755} \\ -2920 \\ \hline 2555 \\ -2555 \\ \hline 0 \end{array}$$

Exercise-12

1. 134 is rounded off to 100 (nearest hundreds) and 22 is rounded off to 20 (nearest tens).
100 ÷ 20 = 5.
So, the estimated quotient is 5.
2. 179 is rounded off to 200 (nearest hundreds) and 18 is rounded off to 20 (nearest tens).
200 ÷ 20 = 10.
So, the estimated quotient is 10.
3. 393 is rounded off to 400 (nearest hundreds) and 17 is rounded off to 20 (nearest tens).
400 ÷ 20 = 20.
So, the estimated quotient is 20.
4. 201 is rounded off to 200 (nearest hundreds) and 47 is rounded off to 50 (nearest tens).
200 ÷ 50 = 4.
So, the estimated quotient is 4.
5. 198 is rounded off to 200 (nearest hundreds) and 11 is rounded off to 10 (nearest tens).
200 ÷ 10 = 20.
So, the estimated quotient is 20.
6. 438 is rounded off to 400 (nearest hundreds) and 24 is rounded off to 20 (nearest tens).
400 ÷ 20 = 20.
So, the estimated quotient is 20.
7. 579 is rounded off to 600 (nearest hundreds) and 35 is rounded off to 40 (nearest tens).
600 ÷ 40 = 15.
So, the estimated quotient is 15.
8. 810 is rounded off to 800 (nearest hundreds) and 52 is rounded off to 50 (nearest tens).
800 ÷ 50 = 16.
So, the estimated quotient is 16.

Mental Maths Corner



Teacher Signature HOD Signature Principal Signature

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