Exercise 6

1. (a) 4132 × 27

```
  4132
   × 27
 ------
 28924   (4132 × 7)
+8264    (4132 × 2)
 ------
 111564
```

(b) 6309 × 36

```
  6309
   × 36
 ------
 37854   (6309 × 6)
+18927   (6309 × 3)
 ------
 227124
```

(c) 23008 × 95

```
  23008
   × 95
 ------
 115040  (23008 × 5)
+207072  (23008 × 9)
 ------
 2185760
```

2. (a) 3688 × 456

```
  3688
  × 456
 ------
 22128   (3688 × 6)
 18440   (3688 × 5)
+14752   (3688 × 4)
 ------
 1681728
```

(b) 7089 × 789

```
  7089
  × 789
 ------
 63801   (7089 × 9)
 56712   (7089 × 8)
+49623   (7089 × 7)
 ------
 5593221
```

(c) 60878 × 808

```
  60878
  × 808
 ------
 487024  (60878 × 8)
 000000  (60878 × 0)
+487024  (60878 × 8)
 ------
 49189424
```

3. (a) 2308×8032

$$
\begin{array}{rl}
2308 & \\
\times\ 8032 & \\
\hline
4616 & (2308 \times 2) \\
6924 & (2308 \times 3) \\
0000 & (2308 \times 0) \\
+\ 18464 & (2308 \times 8) \\
\hline
18537856 &
\end{array}
$$

(b) 1234×4321

$$
\begin{array}{rl}
1234 & \\
\times\ 4321 & \\
\hline
1234 & (1234 \times 1) \\
2468 & (1234 \times 2) \\
3702 & (1234 \times 3) \\
+\ 4936 & (1234 \times 4) \\
\hline
5332114 &
\end{array}
$$

(c) 81009×8989

$$
\begin{array}{rl}
81009 & \\
\times\ 8989 & \\
\hline
729081 & (81009 \times 9) \\
648072 & (81009 \times 8) \\
729081 & (81009 \times 9) \\
+\ 648072 & (81009 \times 8) \\
\hline
728189901 &
\end{array}
$$

4. (a) 1478×5000

$$
\begin{array}{rl}
1478 & \\
\times\ 5000 & \\
\hline
0000 & (1478 \times 0) \\
0000 & (1478 \times 0) \\
0000 & (1478 \times 0) \\
+\ 7390 & (1478 \times 5) \\
\hline
7390000 &
\end{array}
$$

(b) 94×70000

$$
\begin{array}{rl}
94 & \\
\times\ 70000 & \\
\hline
00 & (94 \times 0) \\
00 & (94 \times 0) \\
00 & (94 \times 0) \\
00 & (94 \times 0) \\
+\ 658 & (94 \times 7) \\
\hline
6580000 &
\end{array}
$$

(c) 79×12000

$$
\begin{array}{rl}
79 & \\
\times\ 12000 & \\
\hline
00 & (79 \times 0) \\
00 & (79 \times 0) \\
00 & (79 \times 0) \\
158 & (79 \times 2) \\
+\ 79 & (79 \times 1) \\
\hline
948000 &
\end{array}
$$

5. (a) $78669 \div 67$

$$
\begin{array}{r|l}
67 & 78669 \\
 & -67 \\
\hline
 & 116 \\
 & -67 \\
\hline
 & 496 \\
 & -469 \\
\hline
 & 279 \\
 & -268 \\
\hline
 & 11
\end{array}
\quad 1174
$$

$\therefore$ Quotient = 1174
Remainder = 11

(b) $841231 \div 38$

$$
\begin{array}{r|l}
38 & 841231 \\
 & -76 \\
\hline
 & 81 \\
 & -76 \\
\hline
 & 52 \\
 & -38 \\
\hline
 & 143 \\
 & -114 \\
\hline
 & 291 \\
 & -266 \\
\hline
 & 25
\end{array}
\quad 22137
$$

$\therefore$ Quotient = 22137
Remainder = 25

(c) $618974 \div 56$

$$
\begin{array}{r|l}
56 & 618974 \\
 & -56 \\
\hline
 & 58 \\
 & -56 \\
\hline
 & 297 \\
 & -280 \\
\hline
 & 174 \\
 & -168 \\
\hline
 & 6
\end{array}
\quad 11053
$$

$\therefore$ Quotient = 11053
Remainder = 6

(d) $1223456 \div 82$

$$
\begin{array}{r|l}
82 & 1223456 \\
 & -82 \\
\hline
 & 403 \\
 & -328 \\
\hline
 & 754 \\
 & -738 \\
\hline
 & 165 \\
 & -164 \\
\hline
 & 16
\end{array}
\quad 14920
$$

$\therefore$ Quotient = 14920
Remainder = 16

(e) $63143901 \div 44$

$$
\begin{array}{r|l}
44 & 63143901 \\
 & -44 \\
\hline
 & 191 \\
 & -176 \\
\hline
 & 154 \\
 & -132 \\
\hline
 & 223 \\
 & -220 \\
\hline
 & 390 \\
 & -352 \\
\hline
 & 381 \\
 & -352 \\
\hline
 & 29
\end{array}
\quad 1435088
$$

$\therefore$ Quotient = 1435088, Remainder = 29

(f) $12345006 \div 81$

$$
\begin{array}{r|l}
81 & 12345006 \\
 & -81 \\
\hline
 & 424 \\
 & -405 \\
\hline
 & 195 \\
 & -162 \\
\hline
 & 330 \\
 & -324 \\
\hline
 & 606 \\
 & -567 \\
\hline
 & 39
\end{array}
\quad 152407
$$

$\therefore$ Quotient = 152407
Remainder = 39

6. (a) $87212 \div 123$

$$
\begin{array}{r|l}
123 & 87212 \\
-861 & 709 \\
\hline
1112 & \\
-1107 & \\
\hline
5 &
\end{array}
$$

$\therefore$ Quotient = 709

Remainder = 5

(b) $81376 \div 789$

$$
\begin{array}{r|l}
789 & 81376 \\
-789 & 103 \\
\hline
2476 & \\
-2367 & \\
\hline
109 &
\end{array}
$$

$\therefore$ Quotient = 103

Remainder = 109

(c) $806873 \div 637$

$$
\begin{array}{r|l}
637 & 806873 \\
-637 & 1266 \\
\hline
1698 & \\
-1274 & \\
\hline
4247 & \\
-3822 & \\
\hline
4253 & \\
-3822 & \\
\hline
431 &
\end{array}
$$

$\therefore$ Quotient = 1266

Remainder = 431

(d) $898420 \div 358$

$$
\begin{array}{r|l}
358 & 898420 \\
-716 & 2509 \\
\hline
1824 & \\
-1790 & \\
\hline
3420 & \\
-3222 & \\
\hline
198 &
\end{array}
$$

$\therefore$ Quotient = 2509

Remainder = 198

(e) $3158795 \div 441$

$$
\begin{array}{r|l}
441 & 3158795 \\
-3087 & 7162 \\
\hline
717 & \\
-441 & \\
\hline
2769 & \\
-2646 & \\
\hline
1235 & \\
-882 & \\
\hline
353 &
\end{array}
$$

$\therefore$ Quotient = 7162

Remainder = 353

(f) $3159569 \div 839$

$$
\begin{array}{r|l}
839 & 3159569 \\
-2517 & 3765 \\
\hline
6425 & \\
-5873 & \\
\hline
5526 & \\
-5034 & \\
\hline
4929 & \\
-4195 & \\
\hline
734 &
\end{array}
$$

$\therefore$ Quotient = 3765

Remainder = 734

7. (a) $348043 \div 1324$

$$
\begin{array}{r|l}
1324 & 348043 \\
 & -2648 \\
\hline
 & 8324 \\
 & -7944 \\
\hline
 & 3803 \\
 & -2648 \\
\hline
 & 1155
\end{array}
\quad 262
$$

$\therefore$ Quotient = 262
Remainder = 1155

(b) $5820635 \div 2875$

$$
\begin{array}{r|l}
2875 & 5820635 \\
 & -5750 \\
\hline
 & 7063 \\
 & -5750 \\
\hline
 & 13135 \\
 & -11500 \\
\hline
 & 1635
\end{array}
\quad 2024
$$

$\therefore$ Quotient = 2024
Remainder = 1635

(c) $27654321 \div 4831$

$$
\begin{array}{r|l}
4831 & 27654321 \\
 & -24155 \\
\hline
 & 34993 \\
 & -33817 \\
\hline
 & 11762 \\
 & -9662 \\
\hline
 & 21001 \\
 & -19324 \\
\hline
 & 1677
\end{array}
\quad 5724
$$

$\therefore$ Quotient = 5724
Remainder = 1677

(d) $610050029 \div 8012$

$$
\begin{array}{r|l}
8012 & 610050029 \\
 & -56084 \\
\hline
 & 49210 \\
 & -48072 \\
\hline
 & 11380 \\
 & -8012 \\
\hline
 & 33682 \\
 & -32048 \\
\hline
 & 16349 \\
 & -16024 \\
\hline
 & 325
\end{array}
\quad 76142
$$

$\therefore$ Quotient = 76142
Remainder = 325

(e) $333112 \div 2119$

$$
\begin{array}{r|l}
2119 & 333112 \\
 & -2119 \\
\hline
 & 12121 \\
 & -10595 \\
\hline
 & 15262 \\
 & -14833 \\
\hline
 & 429
\end{array}
\quad 157
$$

$\therefore$ Quotient = 157
Remainder = 429

(f) $6880380 \div 8400$

$$
\begin{array}{r|l}
8400 & 6880380 \\
 & -67200 \\
\hline
 & 16038 \\
 & -8400 \\
\hline
 & 76380 \\
 & -75600 \\
\hline
 & 780
\end{array}
\quad 819
$$

$\therefore$ Quotient = 819
Remainder = 780

8. (a) $4256328 \div 1000$

$$
\begin{array}{r|l}
1000\overline{)4256328} & 4256 \\
-4000 & \\
\hline
2563 & \\
-2000 & \\
\hline
5632 & \\
-5000 & \\
\hline
6328 & \\
-6000 & \\
\hline
328 &
\end{array}
$$

$\therefore$ Quotient = 4256

Remainder = 328

(b) $3604285 \div 10000$

$$
\begin{array}{r|l}
10000\overline{)3604285} & 360 \\
-30000 & \\
\hline
60428 & \\
-60000 & \\
\hline
4285 &
\end{array}
$$

$\therefore$ Quotient = 360

Remainder = 4285

(c) $810563 \div 3000$

$$
\begin{array}{r|l}
3000\overline{)810563} & 270 \\
-6000 & \\
\hline
21056 & \\
-21000 & \\
\hline
563 &
\end{array}
$$

$\therefore$ Quotient = 270

Remainder = 563