Chapter 6: Long Division

A. Divide using long division method.

1. 16 ÷ 4

```
        4
     _____
4 )  1 6
   - 1 6
     _____
         0
```

- **Quotient = 4, Remainder = 0**

2. 32 ÷ 8

```
        4
     _____
8 )  3 2
   - 3 2
     _____
         0
```

- **Quotient = 4, Remainder = 0**

3. 56 ÷ 7

```
        8
     _____
7 )  5 6
   - 5 6
     _____
         0
```

- **Quotient = 8, Remainder = 0**

4. 30 ÷ 5

```
        6
     _____
5 )  3 0
   - 3 0
     _____
         0
```

- **Quotient = 6, Remainder = 0**

5. 45 ÷ 9

```
        5
     _____
9 )  4 5
   - 4 5
     _____
         0
```

- **Quotient = 5, Remainder = 0**

6. 42 ÷ 6

```
        7
     _____
6 )  4 2
   - 4 2
     _____
        0
```

- **Quotient = 7, Remainder = 0**

7. 21 ÷ 3

```
        7
     _____
3 )  2 1
   - 2 1
     _____
        0
```

- **Quotient = 7, Remainder = 0**

8. 28 ÷ 2

```
        1 4
     _____
2 )  2 8
   - 2 ↓
     _____
      0 8
   -   8
     _____
        0
```

- **Quotient = 14, Remainder = 0**

9. 35 ÷ 7

```
        5
     _____
7 )  3 5
   - 3 5
     _____
        0
```

- **Quotient = 5, Remainder = 0**

B. Divide by long division method. Write the quotient (Q).

1. 16 ÷ 2

```
        8
     _____
2 )  1 6
   - 1 6
     _____
        0
```

- **Q = 8**

2. 24 ÷ 6

```
        4
    ______
6 )  2 4
   - 2 4
    ______
       0
```

- **Q = 4**

3. 36 ÷ 12

```
        3
    ______
12 ) 3 6
   - 3 6
    ______
       0
```

- **Q = 3**

4. 20 ÷ 4

```
        5
    ______
4 )  2 0
   - 2 0
    ______
       0
```

- **Q = 5**

5. 69 ÷ 3

```
        2 3
    ______
3 )  6 9
   - 6 ↓
    ______
     0 9
   -   9
    ______
       0
```

- **Q = 23**

6. 55 ÷ 11

```
        5
    ______
11 ) 5 5
   - 5 5
    ______
       0
```

- **Q = 5**

7. 63 ÷ 7

```
        9
      _____
7 )   6 3
    - 6 3
      _____
        0
```

- **Q = 9**

8. 120 ÷ 10

```
        1 2
      _____
10 ) 1 2 0
    - 1 0 ↓
      _____
        2 0
      - 2 0
      _____
          0
```

- **Q = 12**

9. 105 ÷ 7

```
        1 5
      _____
7 )   1 0 5
    -   7 ↓
      _____
        3 5
      - 3 5
      _____
          0
```

- **Q = 15**

C. Make equal groups of 3 each.

1. Total balls = 7

Group 1: (3 balls) | Group 2: (3 balls) | Leftover: (1 ball)

- Number of equal groups = 2 ; Q = 2
- Number of balls left over = 1 ; R = 1

D. Find the quotient (Q) and remainder (R) by long division.

1. 24 ÷ 5

```
        4
      _____
5 )   2 4
    - 2 0
      _____
          4
```

- **Q = 4, R = 4**

2. 18 ÷ 5

```
        3
    ______
5 )  1 8
   - 1 5
   ______
       3
```

- **Q = 3, R = 3**

3. 63 ÷ 6

```
       1 0
    ______
6 )  6 3
   - 6 ↓
   ______
     0 3
   -   0
   ______
       3
```

- **Q = 10, R = 3**

4. 52 ÷ 9

```
        5
    ______
9 )  5 2
   - 4 5
   ______
       7
```

- **Q = 5, R = 7**

5. 39 ÷ 4

```
        9
    ______
4 )  3 9
   - 3 6
   ______
       3
```

- **Q = 9, R = 3**

6. 41 ÷ 8

```
        5
    ______
8 )  4 1
   - 4 0
   ______
       1
```

- **Q = 5, R = 1**

7. 54 ÷ 7

```
        7
      _____
7 )   5 4
    - 4 9
      _____
        5
```

- **Q = 7, R = 5**

8. 25 ÷ 3

```
        8
      _____
3 )   2 5
    - 2 4
      _____
        1
```

- **Q = 8, R = 1**

9. 17 ÷ 2

```
        8
      _____
2 )   1 7
    - 1 6
      _____
        1
```

- **Q = 8, R = 1**

10. 28 ÷ 3

```
        9
      _____
3 )   2 8
    - 2 7
      _____
        1
```

- **Q = 9, R = 1**

11. 87 ÷ 3

```
        2 9
      _____
3 )   8 7
    - 6 ↓
      _____
      2 7
    - 2 7
      _____
        0
```

- **Q = 29, R = 0**

12. 119 ÷ 14

```
        8
      _____
```

```
14 ) 1 1 9
   - 1 1 2
   _______
       7
```

- **Q = 8, R = 7**

E. Find the dividend.

Formula: Dividend = (Quotient × Divisor) + Remainder

Quotient (Q)	Divisor (D)	Remainder (R)	Dividend = (Q × D) + R
16	3	1	(16 × 3) + 1 = 49
29	6	5	(29 × 6) + 5 = 179
47	8	7	(47 × 8) + 7 = 383
52	7	3	(52 × 7) + 3 = 367

F. Divide and verify.

1. 37 ÷ 2

```
      1 8
    _____
2 ) 3 7
    - 2 ↓
    _____
      1 7
    - 1 6
    _____
        1
```

- **Quotient = 18, Remainder = 1**
- **Verify: (18 × 2) + 1 = 36 + 1 = 37 (Dividend)**

2. 57 ÷ 3

```
      1 9
    _____
3 ) 5 7
    - 3 ↓
    _____
      2 7
    - 2 7
    _____
        0
```

- **Quotient = 19, Remainder = 0**
- **Verify: (19 × 3) + 0 = 57 + 0 = 57 (Dividend)**

3. 95 ÷ 5

```
      1 9
    _____
5 ) 9 5
  - 5 ↓
    _____
      4 5
    - 4 5
    _____
        0
```

- **Quotient = 19, Remainder = 0**
- **Verify: (19 × 5) + 0 = 95 + 0 = 95 (Dividend)**

G. Divide using long division and verify your answer.

1. 29 ÷ 3

```
        9
    _____
3 ) 2 9
  - 2 7
    _____
        2
```

- **Result: Q = 9, R = 2**
- **Verification: (9 × 3) + 2 = 27 + 2 = 29**

2. 34 ÷ 4

```
        8
    _____
4 ) 3 4
  - 3 2
    _____
        2
```

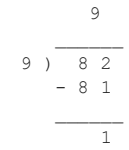
- **Result: Q = 8, R = 2**
- **Verification: (8 × 4) + 2 = 32 + 2 = 34**

3. 55 ÷ 5

```
      1 1
    _____
5 ) 5 5
  - 5 ↓
    _____
      0 5
    -   5
    _____
        0
```

- **Result: Q = 11, R = 0**
- **Verification: (11 × 5) + 0 = 55 + 0 = 55**

4. 82 ÷ 9

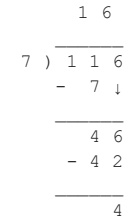


- **Result: Q = 9, R = 1**
- **Verification: (9 × 9) + 1 = 81 + 1 = 82**

5. 98 ÷ 2

- **Result: Q = 49, R = 0**
- **Verification: (49 × 2) + 0 = 98 + 0 = 98**

6. 116 ÷ 7



- **Result: Q = 16, R = 4**
- **Verification: (16 × 7) + 4 = 112 + 4 = 116**

7. 145 ÷ 8

- **Result: Q = 18, R = 1**
- **Verification: (18 × 8) + 1 = 144 + 1 = 145**

8. 359 ÷ 6

```
        5 9
      ______
6 ) 3 5 9
    - 3 0 ↓
    _______
        5 9
      - 5 4
    _______
          5
```

- **Result: Q = 59, R = 5**
- **Verification: (59 × 6) + 5 = 354 + 5 = 359**

9. 502 ÷ 4

```
        1 2 5
      ______
4 ) 5 0 2
    - 4 ↓ |
    ______|
      1 0 |
    -   8 ↓
    _______
        2 2
      - 2 0
    _______
          2
```

- **Result: Q = 125, R = 2**
- **Verification: (125 × 4) + 2 = 500 + 2 = 502**

10. 631 ÷ 2

```
        3 1 5
      ______
2 ) 6 3 1
    - 6 ↓ |
    ______|
      0 3 |
    -   2 ↓
    _______
        1 1
      - 1 0
    _______
          1
```

- **Result: Q = 315, R = 1**
- **Verification: (315 × 2) + 1 = 630 + 1 = 631**

11. 777 ÷ 8

```
        9 7
      ______
8 ) 7 7 7
    - 7 2 ↓
```

```
   _____
     5 7
   - 5 6
   _____
       1
```

- **Result: Q = 97, R = 1**
- **Verification: (97 × 8) + 1 = 776 + 1 = 777**

12. 836 ÷ 9

```
         9 2
      _______
  9 ) 8 3 6
      - 8 1 ↓
      _______
        2 6
      - 1 8
      _______
          8
```

- **Result: Q = 92, R = 8**
- **Verification: (92 × 9) + 8 = 828 + 8 = 836**

13. 915 ÷ 6

```
        1 5 2
      _______
  6 ) 9 1 5
      - 6 ↓ |
      _______|
        3 1 |
      - 3 0 ↓
      _______
          1 5
        - 1 2
      _______
            3
```

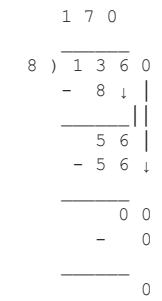
- **Result: Q = 152, R = 3**
- **Verification: (152 × 6) + 3 = 912 + 3 = 915**

14. 1009 ÷ 5

```
        2 0 1
      _______
  5 ) 1 0 0 9
      - 1 0 ↓ |
      _______| |
        0 0 | |
      -   0 ↓ |
      _______|
          0 9
        -   5
      _______
            4
```

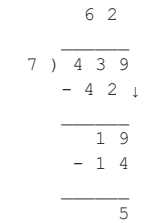
- **Result: Q = 201, R = 4**
- **Verification: (201 × 5) + 4 = 1005 + 4 = 1009**

15. 1360 ÷ 8



- **Result: Q = 170, R = 0**
- **Verification: (170 × 8) + 0 = 1360 + 0 = 1360**

16. 439 ÷ 7



- **Result: Q = 62, R = 5**
- **Verification: (62 × 7) + 5 = 434 + 5 = 439**

H. Solve the problems.

1. Rita has 41 bananas. She wants to give them equally to 5 monkeys. How many bananas will be left?

Total number of bananas = 41

Total number of monkeys = 5

∴ Bananas per monkey = 41 ÷ 5 = 8 bananas, with 1 banana left over

2. 126 sugarcanes were fed equally to 9 elephants. How many did each elephant get?

Total sugarcanes = 126

Total number of elephants = 9

∴ Sugarcanes each elephant gets = 126 ÷ 9 = 14 sugarcanes

3. 336 flamingos were spotted in the lake. They were all clicked with 8 flamingos in each photograph. How many photographs were clicked?

Total flamingos spotted = 336

Flamingos per photograph = 8

∴ Total photographs clicked = 336 ÷ 8 = 42 photographs

4. Ali gave 3 carrots to each rabbit. He gave away 69 carrots. How many rabbits were there?

Total carrots given away = 69

Carrots given to 1 rabbit = 3

∴ Total number of rabbits = 69 ÷ 3 = 23 rabbits

5. Gurpreet drew 2 peacock feathers each on some cards. If she drew 152 feathers, how many cards did she make?

Total peacock feathers drawn = 152

Feathers per card = 2

∴ Total cards made = 152 ÷ 2 = 76 cards

6. ₹975 was paid for zoo tickets for 39 children. What was the cost of 1 ticket?

Total cost paid = ₹975

Total number of children = 39

∴ Cost of 1 ticket = 975 ÷ 39 = ₹25

7. In a craft class, each student made 5 daffodil flowers. Total number of flowers made by all the students are 125. How many students are there in the class?

Total flowers made = 125

Flowers made by 1 student = 5

∴ Total number of students = 125 ÷ 5 = 25 students

8. Gurmeet counted 392 legs in a cowshed. How many cows were there in the shed?

Total legs counted = 392

Number of legs 1 cow has = 4

∴ Total number of cows in the shed = 392 ÷ 4 = 98 cows

9. 747 chairs are arranged in a hall in rows and columns. There are 9 chairs in each row. Find the number of chairs in each column.

Total chairs = 747

Chairs in each row = 9

∴ Number of chairs in each column = 747 ÷ 9 = 83 chairs

10. At the party, each guest was welcomed with a bunch of 4 iris flowers. If 1052 iris flowers were used in making bunches of 4 flowers each, then how many guests were welcomed?

Total iris flowers used = 1052

Flowers in each bunch = 4

∴ Total guests welcomed = 1052 ÷ 4 = 263 guests

I. Case Study

Arjun’s Mango Harvest

Arjun picked 145 mangoes from his orchard. He wanted to pack them equally into 5 baskets to sell at the local market. Afterwards, his grandfather gave him 3 extra mangoes to keep for himself.

1. How many total mangoes did Arjun pick from his orchard?

Answer: 145 mangoes

2. How many baskets did he use to pack the mangoes?

Answer: 5 baskets

3. How many mangoes were packed in each basket?

Total mangoes = 145
Number of baskets = 5
∴ Mangoes per basket = 145 ÷ 5 = 29 mangoes

4. How many extra mangoes did his grandfather give him?

Answer: 3 mangoes

5. If Arjun decides to share those 3 extra mangoes equally among 3 of his friends, how many mangoes will each friend get?

Total extra mangoes = 3
Total friends = 3
∴ Mangoes each friend gets = 3 ÷ 3 = 1 mango