

## Understanding Division

Division is sharing equally. “ $24 \div 6$ ” asks one of two things: how many in each group if we make 6 groups, or how many groups of 6 fit into 24. Both meanings give the same answer.

Word	Meaning
Dividend	The number being shared (the total)
Divisor	The number you divide by (the group size or group count)
Quotient	The answer to a division problem

### Key Concepts

1. Division is splitting a number into *equal* groups. The total being shared is the **dividend**; the size of each group (or the number of groups) is the **divisor**; the answer is the **quotient**.
2. Two ways to read  $24 \div 6$ : *Sharing* (split 24 into 6 groups; each group gets 4). *Grouping* (how many groups of 6 are in 24; the answer is 4).
3. Division is the **inverse** of multiplication. If  $6 \times 4 = 24$ , then  $24 \div 6 = 4$  and  $24 \div 4 = 6$ .
4. Special rules: any number divided by 1 is itself. *Zero divided by anything (not zero) is 0*. You can never divide by 0.

### Worked Examples

①  $18 \div 3$

 Ask yourself: “How many 3’s make 18?” Count by 3’s until you hit 18: 3, 6, 9, 12, 15, 18 — that’s six counts. So  $18 \div 3 = 6$ . Equivalently, if you shared 18 items among 3 friends, each would get 6.

 **Answer: 6**

②  $24 \div 6$

 Use the multiplication you know: “6 times *what* equals 24?” That’s the same as  $24 \div 6$ . From the times table,  $6 \times 4 = 24$ , so  $24 \div 6 = 4$ . Sharing 24 items among 6 groups gives 4 per group.

 **Answer: 4**

③  $0 \div 5$

 This one is a rule worth memorizing. Zero divided by any non-zero number is always 0, because there are no items to share — each of the 5 groups gets 0 items. (Watch out:  $5 \div 0$  is *undefined*. You cannot divide by zero.)

 **Answer: 0**

### Practice Problems

Find each quotient.

- |                |       |                 |       |
|----------------|-------|-----------------|-------|
| 1. $10 \div 2$ | _____ | 7. $28 \div 7$  | _____ |
| 2. $15 \div 5$ | _____ | 8. $48 \div 8$  | _____ |
| 3. $21 \div 3$ | _____ | 9. $20 \div 5$  | _____ |
| 4. $32 \div 4$ | _____ | 10. $54 \div 6$ | _____ |
| 5. $45 \div 9$ | _____ | 11. $0 \div 7$  | _____ |
| 6. $36 \div 6$ | _____ | 12. $63 \div 9$ | _____ |

**Study Tips**

- 👉 If you forget a division fact, ask: “*divisor* times *what* equals *dividend*?” That’s the same question as the division, but easier to answer from memorized times tables.
- 👉 Drawing equal groups with dots or circles is a great strategy when the numbers feel hard. Sharing physical objects works even better.
- 👉 Zero divided by a number is 0; a number divided by 1 is itself. Don’t try to divide *by* 0 — it has no answer.

**Word Problems**

1. Mom has 24 strawberries to share equally among 4 children. How many strawberries does each child get?

Answer: \_\_\_\_\_

2. A teacher has 30 pencils. She gives each student 5 pencils. How many students get pencils?

Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

1.  $2 \times 5 = 10$ , so  $10 \div 2$ .

 **Answer:** 5

2.  $5 \times 3 = 15$ .

 **Answer:** 3

3.  $3 \times 7 = 21$ .

 **Answer:** 7

4.  $4 \times 8 = 32$ .

 **Answer:** 8

5.  $9 \times 5 = 45$ .

 **Answer:** 5

6.  $6 \times 6 = 36$ .

 **Answer:** 6

7.  $7 \times 4 = 28$ .

 **Answer:** 4

8.  $8 \times 6 = 48$ .

 **Answer:** 6

9.  $5 \times 4 = 20$ .

 **Answer:** 4

10.  $6 \times 9 = 54$ .

 **Answer:** 9

11. Zero divided by any non-zero number is 0.

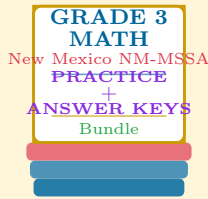
 **Answer:** 0

12.  $9 \times 7 = 63$ .

 **Answer:** 7**Word Problems**1. Equal sharing:  $24 \div 4 = 6$ . Each child gets 6. **Answer:** 6 strawberries2. Grouping:  $30 \div 5 = 6$ . Six students get pencils. **Answer:** 6 students

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