

Division Facts and Strategies

Every division fact has a multiplication twin. “ $56 \div 8 = ?$ ” is really asking “8 times what is 56?” If you can find the multiplication, you found the division.

| Strategy | Example |
|----------------------------------|---|
| Use the multiplication twin | $56 \div 8$: ask “ $8 \times ? = 56$,” answer 7 |
| Fact family (3 numbers, 4 facts) | 5, 9, 45 gives 4 facts (2 mult. + 2 div.) |
| Halving for $\div 2$ | $36 \div 2 = 18$ (half of 36) |

Key Concepts

1. Every division problem $a \div b$ can be answered by asking: “ b times *what* equals a ?” That “what” is the answer.
2. A **fact family** is the set of 4 equations you can build from three related numbers. For 5, 9, 45: $5 \times 9 = 45$, $9 \times 5 = 45$, $45 \div 5 = 9$, and $45 \div 9 = 5$.
3. Dividing by 2 is the same as taking *half*. Dividing by 4 is halving twice. Dividing by 10 is dropping the trailing zero.
4. The goal is automatic recall. Knowing your multiplication facts is the fastest way to know your division facts too.

Worked Examples

① $56 \div 8$

 Find the multiplication twin: “8 times what equals 56?” From the $\times 8$ facts, $8 \times 7 = 56$. So $56 \div 8 = 7$.

 **Answer:** 7

② $36 \div 4$

 Use the halving strategy. Dividing by 4 is like halving twice. Half of 36 is 18, half of 18 is 9. So $36 \div 4 = 9$. (Or use the twin: $4 \times 9 = 36$.)

 **Answer:** 9

③ Write the fact family for 5, 9, and 45.

 From any three related numbers, you get four equations — two multiplication and two division. The two factors 5 and 9 can multiply in either order, and the product 45 can be divided by either factor. The full family is: $5 \times 9 = 45$, $9 \times 5 = 45$, $45 \div 5 = 9$, $45 \div 9 = 5$.

 **Answer:** Four equations as above

Practice Problems

Find each quotient.

- | | | | |
|----------------|-------|-----------------|-------|
| 1. $24 \div 3$ | _____ | 7. $16 \div 4$ | _____ |
| 2. $42 \div 7$ | _____ | 8. $81 \div 9$ | _____ |
| 3. $40 \div 8$ | _____ | 9. $56 \div 7$ | _____ |
| 4. $27 \div 9$ | _____ | 10. $30 \div 6$ | _____ |
| 5. $72 \div 8$ | _____ | 11. $18 \div 2$ | _____ |
| 6. $35 \div 5$ | _____ | 12. $64 \div 8$ | _____ |

Study Tips

- 👉 For any division problem, your first thought should be: “what multiplies to give me this?” That converts a division you might not know into a multiplication you probably do.
- 👉 Group practice cards by fact family. Once you know one fact, you actually know four.
- 👉 For dividing by 5, multiply the answer by 5 to check. “ $45 \div 5 = 9$, because $9 \times 5 = 45$.” This habit prevents lots of mistakes.

Word Problems

1. A farmer has 54 eggs. He puts them into cartons of 6. How many cartons does he fill?

Answer: _____

2. Maya has 48 photos. She puts the same number on each of 8 pages. How many photos are on each page?

Answer: _____

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

1. $3 \times 8 = 24$.

 **Answer:** 8

2. $7 \times 6 = 42$.

 **Answer:** 6

3. $8 \times 5 = 40$.

 **Answer:** 5

4. $9 \times 3 = 27$.

 **Answer:** 3

5. $8 \times 9 = 72$.

 **Answer:** 9

6. $5 \times 7 = 35$.

 **Answer:** 7

7. $4 \times 4 = 16$.

 **Answer:** 4

8. $9 \times 9 = 81$.

 **Answer:** 9

9. $7 \times 8 = 56$.

 **Answer:** 8

10. $6 \times 5 = 30$.

 **Answer:** 5

11. $2 \times 9 = 18$, or half of 18.

 **Answer:** 9

12. $8 \times 8 = 64$.

 **Answer:** 8**Word Problems**

1. $54 \div 6 = 9$. Nine cartons of six eggs each.

 **Answer:** 9 cartons

2. $48 \div 8 = 6$. Six photos per page.

 **Answer:** 6 photos per page

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