MATHEMATICS · KINDERGARTEN TO GRADE 3

Relationship between multiplication and division

Difficulty level: Easy

Mathematics: Kindergarten to Grade 3

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Overview of the concept

This is how you check your work by undoing it, like sharing 24 cookies among 6 friends and multiplying back to make sure none are missing. If six friends each get four cookies, six times four is twenty-four, so the sharing was right. A shopkeeper checks a bill the same way, by dividing the total back to the price of one item. Multiplication and division undo each other, so each one is the check on the other.



Rule

Multiplication and division undo each other.

If $a \times b = c$, then $\frac{c}{a}$ equals b and $\frac{c}{b}$ equals a. Knowing one multiplication fact gives you two division facts.

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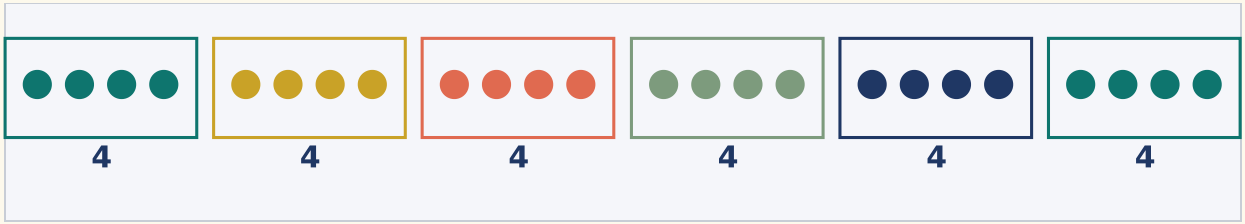
Worked examples

EXAMPLE 1

Q Use $6 \times 4 = 24$ to divide



SOLUTION

You know 6 groups of 4 make 24.

Split 24 back into 6 equal groups.

Each group has 4, so $24 \div 6 = 4$

EXAMPLE 2

Q Use $5 \times 7 = 35$ to divide



SOLUTION

You know 5 groups of 7 make 35.

Split 35 back into 5 equal groups.

Each group has 7, so $35 \div 5 = 7$

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Practice questions

1. 3 teams share 24 players equally. You know 3 × 8 = 24. What is 24 ÷ 3? How many players are on each team?

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2. 24 cookies are shared among 8 friends. You know 3 × 8 = 24. What is 24 ÷ 8? How many cookies does each friend get?

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3 You know $9 \times 4 = 36$. Which two division facts come from it?

- **A** $36 \div 9 = 4$ and $36 \div 4 = 9$
- **B** $36 \div 9 = 9$ and $36 \div 4 = 4$
- **C** $36 \div 4 = 36$ and $36 \div 9 = 36$
- **D** $9 \div 36 = 4$ and $4 \div 36 = 9$

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4 Which of these is NOT true?

- **A** $36 \div 9 = 4$
- **B** $36 \div 4 = 9$
- **C** $9 \times 4 = 36$
- **D** $36 \div 6 = 9$

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5 42 chairs are set out in 7 rows with the same number in each row. How many chairs are in 2 rows?

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6 42 ÷ 6 = 7. Which multiplication proves it?

A. 6 × 7 = 42

B. 6 × 6 = 36

C. 7 × 7 = 49

D. 42 × 6 = 252

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7 45 beads are shared among 5 friends. ? × 5 = 45. How many beads does each friend get?

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8 **Why does knowing $4 \times 9 = 36$ tell you two division facts and not just one?**

- **A** Dividing 36 by 4 gives 4, and dividing 36 by 9 gives 9
- **B** Dividing 36 by 4 gives 9, and dividing 36 by 9 gives 4
- **C** 36 divided by 4 and by 9 both give 36
- **D** $4 \times 9 = 36$ is the only fact it tells you

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9 **$7 \times 8 = 56$. What is $\frac{56}{7}$?**

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10 **Which one of these is different from the others?**

A $\frac{24}{4} = 6$

B $\frac{24}{6} = 4$

C $4 \times 6 = 24$

D $\frac{24}{4} = 8$

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ANSWER KEY

1. 8

2. 3

3. $36 \div 9 = 4$ and $36 \div 4 = 9$

4. $36 \div 6 = 9$

5. 12

6. $6 \times 7 = 42$

7. 9

8. Dividing 36 by 4 gives 9, and dividing 36 by 9 gives 4

9. 8

10. $\frac{24}{4} = 8$

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