Division as an Unknown-Factor Problem

Apply the skill to decisions and designs

Name _____ **Date** _____ **Score** _____ / 8

QUICK REVIEW

Division asks for a missing multiplication factor. For $24 \div 6$, ask $6 \times \square = 24$. Since $6 \times 4 = 24$, $24 \div 6 = 4$. The divisor is the known factor; the quotient is the missing factor.

Worked example

Turn $24 \div 4$ into $4 \times \square = 24$. Find the box and the quotient.

1. The unknown factor counts how many 4s make 24: $4 \times 6 = 24$.
2. So $24 \div 4 = 6$. Check by multiplying $6 \times 4 = 24$.
Answer: $\square = 6$; $24 \div 4 = 6$.

Practice Problems

Show your thinking.

1. 56 seeds fill packets with 8 seeds each. Complete $8 \times \square = 56$ to find the packets.

2. Use $9 \times 6 = 54$ to write two division facts. Tell why both work.

3. An unknown total divided by 7 gives 5. Write a multiplication equation to find the total.

4. With divisor 6, a division has quotient 5 and total 30. Design a new total that makes the quotient 7. How much must the total increase?

5. A baker has 40 rolls. Each bag gets 5 rolls. Use $5 \times 4 = 20$ twice to find the missing bag count.

6. Six teams need the same number of flags. There are 54 flags, including 6 spares that will not be used. Write an unknown-factor equation for the used flags and solve it.

7. You have 32 counters. Design equal rows of 4, then equal rows of 8. For each design, write the missing-factor equation that finds rows.

8. A coach says $27 \div 3 = 9$. A second coach says $27 \div 9 = 3$. Can both be true? Show the single multiplication fact that checks both and label the two group sizes.

Answer Key

1. 7 packets.
2. $54 \div 9 = 6$ and $54 \div 6 = 9$.
3. $7 \times 5 = 35$; total 35.
4. New total 42; increase 12.
5. 8 bags.
6. $6 \times \square = 48$; 8 flags per team.
7. $4 \times 8 = 32$: 8 rows. $8 \times 4 = 32$: 4 rows.
8. Both true; $3 \times 9 = 27$.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Each packet contributes 8 seeds; the needed factor solves $8 \times \square = 56$.

2. $8 \times 7 = 56$, so $56 \div 8 = 7$ packets.

Problem 2

1. 9 groups of 6 give 54, so sharing 54 among 9 gives 6.

2. Switch the factors: $6 \times 9 = 54$, so $54 \div 6 = 9$.

Problem 3

1. A quotient of 5 means 5 groups of 7 make the total.

2. $5 \times 7 = 35$; check $35 \div 7 = 5$.

Problem 4

1. The new missing-factor fact must be $6 \times 7 = 42$, so the dividend is 42.

2. The increase is $42 - 30 = 12$, or two extra groups of 6. Check $42 \div 6 = 7$.

Problem 5

1. One set of 4 bags holds 20 rolls; two such sets hold $20 + 20 = 40$.

2. The bag count is $4 + 4 = 8$, so $5 \times 8 = 40$ and $40 \div 5 = 8$ bags.

Problem 6

1. Used flags total $54 - 6 = 48$. The team equation is $6 \times \square = 48$.

2. Since $6 \times 8 = 48$, the share is $48 \div 6 = 8$ flags per team.

Problem 7

1. With 4 in each row, $4 \times \square = 32$ gives $32 \div 4 = 8$ rows.

2. With 8 in each row, $8 \times \square = 32$ gives $32 \div 8 = 4$ rows.

Problem 8

1. Groups of 3: $3 \times 9 = 27$ gives 9 groups, so $27 \div 3 = 9$.

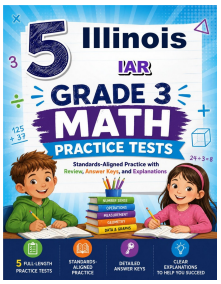
2. Groups of 9: the same total is $9 \times 3 = 27$, giving 3 groups, so $27 \div 9 = 3$.

TESTINAR

Keep Building Grade 3 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 3 books



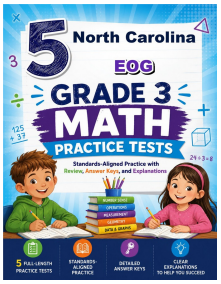
ILLINOIS IAR

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



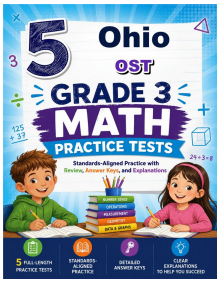
NORTH CAROLINA EOG

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



OHIO OST

5 Full-Length Math Practice Tests

Build Grade 3 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 3 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/3