Interpreting Quotients of Whole Numbers

Spot mistakes, reason, and work backward

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

QUICK REVIEW

Division has two meanings. $12 \div 3 = 4$ can mean 12 objects shared among 3 people, giving 4 each. It can also mean 12 objects in groups of 3, making 4 groups. Check with $3 \times 4 = 12$.

Worked example

For $8 \div 2 = 4$, give both a sharing meaning and an equal-groups meaning.

1. Equal sharing: 2 children get 4 each, so $2 \times 4 = 8$.
2. Equal grouping: 4 groups hold 2 each, so $4 \times 2 = 8$.
Answer: Share among 2: 4 each. Groups of 2: 4 groups.

Practice Problems

Show your thinking.

1. 28 beads fill bags of 4 beads. Lee says the quotient 7 means beads per bag. Correct the label.

2. 3 teams each receive 9 counters. Find the starting total, then write a sharing equation.

3. For $21 \div 7 = 3$, give both a sharing meaning and an equal-groups meaning.

4. 32 counters must fit in boxes of 4. A helper brings 7 boxes. How many more boxes are needed?

5. Three children get $3, 4, 5$ counters. Move as few counters as possible to make equal shares. Write the division equation.

Child	Counters
A	3
B	4
C	5

6. An empty basket has 0 apples to share among 5 children. Find $0 \div 5$ and explain what the quotient means.

7. One group shares 12 pencils equally among 3 children. Another shares 20 pencils equally among 5. Do the children get equal-sized shares? Are the starting totals equal?

8. Complete both rows. Explain why the quotients count different things.

Children	Given	Find
24	4 teams	children per team
24	6 per team	teams

Answer Key

1. 7 bags; 4 beads per bag.
2. 27 counters; $27 \div 3 = 9$.
3. Share among 7: 3 each. Groups of 7: 3 groups.
4. 1 more box.
5. Move 1 from the child with 5 to the child with 3; $12 \div 3 = 4$.
6. 0 apples per child.
7. Each gets 4 pencils; starting totals differ.
8. $24 \div 4 = 6$ children per team; $24 \div 6 = 4$ teams.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $28 \div 4 = 7$ because $7 \times 4 = 28$.

2. The size 4 beads per bag is already given; the unknown 7 is the number of bags.

Problem 2

1. Combine the shares: $3 \times 9 = 27$ counters.

2. Sharing the total again gives $27 \div 3 = 9$ per team.

Problem 3

1. Equal sharing: 7 children get 3 each, so $7 \times 3 = 21$.

2. Equal grouping: 3 groups hold 7 each, so $3 \times 7 = 21$.

Problem 4

1. The total needs $32 \div 4 = 8$ boxes.

2. $8 - 7 = 1$, so bring 1 more box.

Problem 5

1. The total is $3 + 4 + 5 = 12$; equal sharing among 3 means $12 \div 3 = 4$ each.

2. Moving one counter changes the shares to $4, 4, 4$; $4 + 4 + 4 = 12$ preserves the total.

Problem 6

1. The total is zero, so each of the 5 children receives 0 apples.

2. The check is $5 \times 0 = 0$, so $0 \div 5 = 0$. The divisor is 5, not zero.

Problem 7

1. The first share is $12 \div 3 = 4$ pencils per child.

2. The second is $20 \div 5 = 4$ pencils per child. The quotients match, although $12 \neq 20$.

Problem 8

1. Sharing among 4 teams gives $24 \div 4 = 6$ children on each team.

2. Grouping 24 children in teams of 6 gives $24 \div 6 = 4$ teams; the given and unknown group labels switch.

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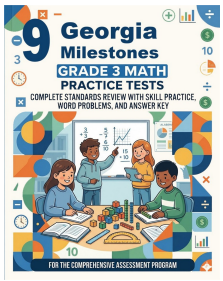

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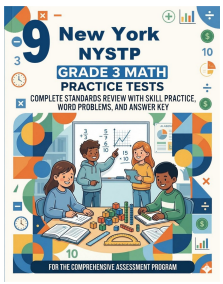

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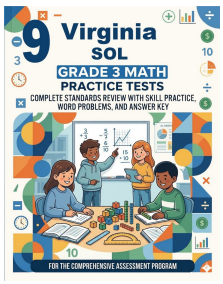

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