Dividing Decimals by Whole Numbers

Dividing Decimals by Whole Numbers: Find, Fix, and Work Backward

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

QUICK REVIEW

Equal shares must recombine to the total. For $7.2 \div 3$, share 72 tenths among 3: $72 \div 3 = 24$ tenths, so each share is 2.4. Check $3 \times 2.4 = 7.2$.

Worked example

Calculate $5.6 \div 4$. Show the place-value or fraction calculation.

1. Rename 5.6 as 56 tenths: $5.6 = \frac{56}{10}$.
2. Share equally: $56 \div 4 = 14$ tenths per group; $\frac{14}{10} = 1.4$.
3. Check by multiplication: $4 \times 1.4 = 5.6$.
Answer: 1.4.

Practice Problems

Show your thinking.

1. A student writes $14 \div 4 = 3.6$. Correct the result and check it.

2. Find the missing number: $\square \div 3 = 4.5$. Check by substitution.

3. Find the missing whole-number divisor: $33 \div \square = 5.5$. Check by substitution.

4. A recorded result for $52 \div 8$ is 6.6. By exactly how much, and in which direction, must that record change? Give the repaired equation.

5. Complete the two-output table for the rule: input $\div 5$. Inputs are 37.5 and 75. Compare the outputs.

Input	Output
37.5	
75	

6. Is $34 \div 4$ greater than, less than, or equal to 8.75? Find the exact gap.

7. Find the missing number: $\square \div 9 = 9.5$. Check by substitution.

8. Find the missing whole-number divisor: $73.5 \div \square = 10.5$. Check by substitution.

Answer Key

1. 3.5, not 3.6.
2. 13.5.
3. 6.
4. Decrease by 0.1; $52 \div 8 = 6.5$.
5. Outputs 7.5 and 15; second minus first is 7.5.
6. Less than by 0.25.
7. 85.5.
8. 7.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Rename 14 as 140 tenths: $14 = \frac{140}{10}$.
2. Share equally: $140 \div 4 = 35$ tenths per group; $\frac{35}{10} = 3.5$.
3. Check by multiplication: $4 \times 3.5 = 14$.
4. The claimed value differs by 0.1, so it fails the exact calculation.

Problem 2

1. Each group has $4.5 = \frac{45}{10}$, or 45 tenths.
2. Combine 3 groups: $3 \times 45 = 135$ tenths; $\frac{135}{10} = 13.5$.
3. Check by sharing the total: $13.5 \div 3 = 4.5$.

Problem 3

1. Use tenths for both amounts: $33 = \frac{330}{10}$ and $5.5 = \frac{55}{10}$.
2. Each group takes 55 tenths, so $330 \div 55 = 6$ groups.
3. Check by substitution: $33 \div 6 = 5.5$.

Problem 4

1. Rename 52 as 520 tenths: $52 = \frac{520}{10}$.
2. Share equally: $520 \div 8 = 65$ tenths per group; $\frac{65}{10} = 6.5$.
3. Check by multiplication: $8 \times 6.5 = 52$.
4. The correction is $6.6 - 6.5 = 0.1$, so subtract that amount from the record.

Problem 5

1. Rename 37.5 as 375 tenths: $37.5 = \frac{375}{10}$.
2. Share equally: $375 \div 5 = 75$ tenths per group; $\frac{75}{10} = 7.5$.
3. Rename 75 as 75 ones: $75 = \frac{75}{1}$.
4. Share equally: $75 \div 5 = 15$ ones per group; $\frac{15}{1} = 15$.
5. The output increases by $15 - 7.5 = 7.5$. Completed table:

Input	Output
37.5	7.5
75	15

Problem 6

1. Rename 34 as 340 tenths: $34 = \frac{340}{10}$.
2. Share equally: $340 \div 4 = 85$ tenths per group; $\frac{85}{10} = 8.5$.
3. Check by multiplication: $4 \times 8.5 = 34$.
4. $8.75 - 8.5 = 0.25$, so the expression is smaller.

Problem 7

1. Each group has $9.5 = \frac{95}{10}$, or 95 tenths.
2. Combine 9 groups: $9 \times 95 = 855$ tenths; $\frac{855}{10} = 85.5$.
3. Check by sharing the total: $85.5 \div 9 = 9.5$.

Problem 8

1. Use tenths for both amounts: $73.5 = \frac{735}{10}$ and $10.5 = \frac{105}{10}$.
2. Each group takes 105 tenths, so $735 \div 105 = 7$ groups.
3. Check by substitution: $73.5 \div 7 = 10.5$.

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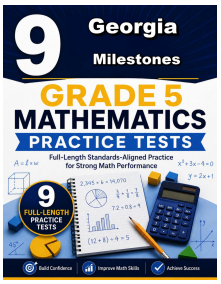

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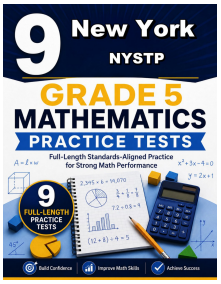

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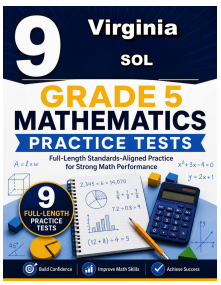

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