Dividing Decimals by Whole Numbers

Dividing Decimals by Whole Numbers: Models and Computation

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. Calculate $8.4 \div 4$. Show the place-value or fraction calculation.

2. Draw a grouping or equal-sharing model for $6.75 \div 3$ and label the result.

3. A 12.6 m ribbon is cut into 6 equal pieces. Find the length of one piece.

4. Use an inverse operation to verify a proposed result of 0.54 for $4.32 \div 8$. Show both computations.

5. Is $15.75 \div 5$ greater than, less than, or equal to 3.4? Find the exact gap.

6. A student writes $9.36 \div 4 = 2.44$. Correct the result and check it.

7. Find the missing whole-number divisor: $7.2 \div \square = 0.8$. Check by substitution.

8. Calculate $18.48 \div 7$. Show the place-value or fraction calculation.

Answer Key

1. 2.1.
2. 2.25.
3. 2.1 m.
4. The result 0.54 is correct.
5. Less than by 0.25.
6. 2.34, not 2.44.
7. 9.
8. 2.64.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Rename 8.4 as 84 tenths: $8.4 = \frac{84}{10}$.
2. Share equally: $84 \div 4 = 21$ tenths per group; $\frac{21}{10} = 2.1$.
3. Check by multiplication: $4 \times 2.1 = 8.4$.

Problem 2

1. Rename 6.75 as 675 hundredths: $6.75 = \frac{675}{100}$.
2. Share equally: $675 \div 3 = 225$ hundredths per group; $\frac{225}{100} = 2.25$.
3. The 3 equal groups are shown below:

Group	Hundredths	Amount
1	225	2.25
2	225	2.25
3	225	2.25
Total	675	6.75

4. Check by multiplication: $3 \times 2.25 = 6.75$.

Problem 3

1. Rename 12.6 as 126 tenths: $12.6 = \frac{126}{10}$.
2. Share equally: $126 \div 6 = 21$ tenths per group; $\frac{21}{10} = 2.1$.
3. Each piece is 2.1 m long. Check by multiplication: $6 \times 2.1 = 12.6$.

Problem 4

1. Rename 4.32 as 432 hundredths: $4.32 = \frac{432}{100}$.
2. Share equally: $432 \div 8 = 54$ hundredths per group; $\frac{54}{100} = 0.54$.
3. Check by multiplication: $8 \times 0.54 = 4.32$.

Problem 5

1. Rename 15.75 as 1575 hundredths: $15.75 = \frac{1575}{100}$.
2. Share equally: $1575 \div 5 = 315$ hundredths per group; $\frac{315}{100} = 3.15$.
3. Check by multiplication: $5 \times 3.15 = 15.75$.
4. $3.4 - 3.15 = 0.25$, so the expression is smaller.

Problem 6

1. Rename 9.36 as 936 hundredths: $9.36 = \frac{936}{100}$.
2. Share equally: $936 \div 4 = 234$ hundredths per group; $\frac{234}{100} = 2.34$.
3. Check by multiplication: $4 \times 2.34 = 9.36$.
4. The claimed value differs by 0.1, so it fails the exact calculation.

Problem 7

1. Use tenths for both amounts: $7.2 = \frac{72}{10}$ and $0.8 = \frac{8}{10}$.
2. Each group takes 8 tenths, so $72 \div 8 = 9$ groups.
3. Check by substitution: $7.2 \div 9 = 0.8$.

Problem 8

1. Rename 18.48 as 1848 hundredths: $18.48 = \frac{1848}{100}$.
2. Share equally: $1848 \div 7 = 264$ hundredths per group; $\frac{264}{100} = 2.64$.
3. Check by multiplication: $7 \times 2.64 = 18.48$.

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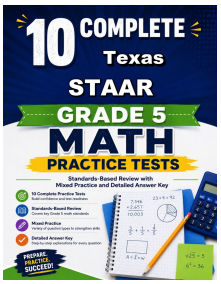

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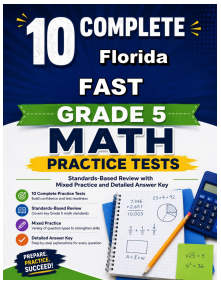

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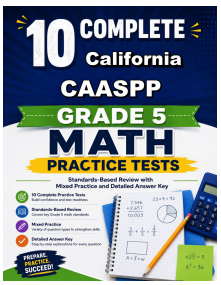

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