Adding and Subtracting Decimals

Adding and Subtracting Decimals: Models and Computation

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

QUICK REVIEW

Align decimal points so like units combine. Add zeros if needed. For $4.7 - 1.86$, write $4.70 - 1.86 = 2.84$; regroup a whole as 10 tenths when needed. Check with $2.84 + 1.86 = 4.70$.

Worked example

Calculate $5.6 + 0.8$. Show the place-value or fraction calculation.

1. Align places: $5.6 = 560 \div 100$ and $0.8 = 80 \div 100$.
2. Combine hundredths: $560 + 80 = 640$.
3. $640 \div 100 = 6.4$; check $6.4 - 0.8 = 5.6$.
Answer: 6.4.

Practice Problems

Show your thinking.

1. Calculate $3.47 + 2.86$. Show the place-value or fraction calculation.

2. Use equivalent fractions or equal-sized units to model $5.03 - 2.86$ and find the result.

3. A container holds 12.65 L. Another 4.78 L is added. How much is in the container now?

4. Use an inverse operation to verify a proposed result of 6.17 for $7.06 - 0.89$. Show both computations.

5. Is $8.56 + 3.67$ greater than, less than, or equal to 12.48? Find the exact gap.

6. A student writes $6.31 - 2.47 = 3.94$. Correct the result and check it.

7. Find the missing number: $7.05 + \square = 7.91$. Check by substitution.

8. Calculate $15.2 - 7.93$. Show the place-value or fraction calculation.

Answer Key

1. 6.33.
2. 2.17.
3. 17.43 L.
4. The result 6.17 is correct.
5. Less than by 0.25.
6. 3.84, not 3.94.
7. 0.86.
8. 7.27.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Align places: $3.47 = 347 \div 100$ and $2.86 = 286 \div 100$.
2. Combine hundredths: $347 + 286 = 633$.
3. $633 \div 100 = 6.33$; check $6.33 - 2.86 = 3.47$.

Problem 2

1. Align places: $5.03 = 503 \div 100$ and $2.86 = 286 \div 100$.
2. Combine hundredths: $503 - 286 = 217$.
3. $217 \div 100 = 2.17$; check $2.17 + 2.86 = 5.03$.

Problem 3

1. The quantities call for $12.65 + 4.78$; the result is measured in L.
2. Align places: $12.65 = 1265 \div 100$ and $4.78 = 478 \div 100$.
3. Combine hundredths: $1265 + 478 = 1743$.
4. $1743 \div 100 = 17.43$; check $17.43 - 4.78 = 12.65$.

Problem 4

1. Align places: $7.06 = 706 \div 100$ and $0.89 = 89 \div 100$.
2. Combine hundredths: $706 - 89 = 617$.
3. $617 \div 100 = 6.17$; check $6.17 + 0.89 = 7.06$.
4. Inverse check: $6.17 + 0.89 = 7.06$.

Problem 5

1. Align places: $8.56 = 856 \div 100$ and $3.67 = 367 \div 100$.
2. Combine hundredths: $856 + 367 = 1223$.
3. $1223 \div 100 = 12.23$; check $12.23 - 3.67 = 8.56$.
4. $12.48 - 12.23 = 0.25$, so the expression is smaller.

Problem 6

1. Align places: $6.31 = 631 \div 100$ and $2.47 = 247 \div 100$.
2. Combine hundredths: $631 - 247 = 384$.
3. $384 \div 100 = 3.84$; check $3.84 + 2.47 = 6.31$.
4. The claimed value differs by 0.1, so it fails the exact calculation.

Problem 7

1. Undo the known operation to find the missing value: $7.91 - 7.05 = 0.86$.
2. Align places: $7.05 = 705 \div 100$ and $0.86 = 86 \div 100$.
3. Combine hundredths: $705 + 86 = 791$.
4. $791 \div 100 = 7.91$; check $7.91 - 0.86 = 7.05$.

Problem 8

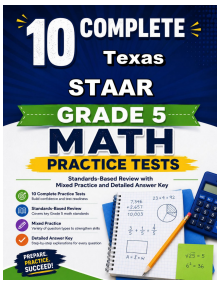
1. Align places: $15.2 = 1520 \div 100$ and $7.93 = 793 \div 100$.
2. Combine hundredths: $1520 - 793 = 727$.
3. $727 \div 100 = 7.27$; check $7.27 + 7.93 = 15.2$.

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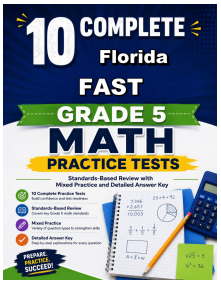
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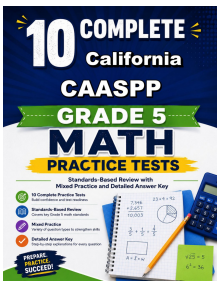
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