Decimal Operations

Decimal operations: Models and calculations

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

QUICK REVIEW

For addition/subtraction align decimal places: $3.40 - 1.75 = 1.65$. For multiplication count decimal places: $1.2 \times 0.4 = 0.48$. For division multiply both numbers by the same power of ten: $4.8/0.6 = 48/6 = 8$. Estimate first to check the size.

Worked example

Compute $6.3 \div 0.7$.

1. Multiply both numbers by 10: $6.3 \div 0.7 = 63 \div 7$.
2. 9 groups use $9 \times 7 = 63$, leaving $63 - 63 = 0$.
3. Nothing is left, so the quotient is 9.
4. Check $9 \times 0.7 = 6.3$.

Answer: 9.

Practice Problems

Show your thinking.

1. Add $12.45 + 3.8$.

2. Subtract $8.2 - 5.67$.

3. Find 2.4×0.35.

4. Divide $7.56 \div 0.9$.

5. Three meters cost 4.75 dollars per meter. Find cost in dollars.

6. Does $0.84 \div 0.2$ exceed 0.84? Compute it.

7. Add $0.48 + 0.7$ by aligning place values.

8. How many 0.8-length groups make 5.6?

Answer Key

1. 16.25.
2. 2.53.
3. 0.84.
4. 8.4.
5. 14.25 dollars.
6. 4.2. Yes, $4.2 > 0.84$.
7. 1.18.
8. 7 groups.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Align the decimal points: write 12.45 and 3.80 to the same decimal place.
2. In hundredths, $1245 + 380 = 1625$.
3. Rename: 1625 hundredths is 16.25, since $1625 \div 100 = 16.25$.

Problem 2

1. Align the decimal points: write 8.20 and 5.67 to the same decimal place.
2. In hundredths, $820 - 567 = 253$.
3. Rename: 253 hundredths is 2.53, since $253 \div 100 = 2.53$.

Problem 3

1. Write $2.4 = 24/10$ and $0.35 = 35/100$.
2. Multiply the whole counts: $24 \times 35 = 840$.
3. The combined scale is $10 \times 100 = 1000$. Therefore $840/1000 = 0.84$.

Problem 4

1. Multiply both numbers by 100: $7.56 \div 0.9 = 756 \div 90$.
2. 8 groups use $8 \times 90 = 720$, leaving $756 - 720 = 36$.
3. The leftover is $36/90 = 0.4$ of one group, so the result is 8.4.
4. Check $8.4 \times 0.9 = 7.56$.

Problem 5

1. Write $4.75 = 475/100$ and $3 = 3/1$.
2. Multiply the whole counts: $475 \times 3 = 1425$.
3. The combined scale is $100 \times 1 = 100$. Therefore $1425/100 = 14.25$.
4. In the context, the result is 14.25 dollars.

Problem 6

1. Multiply both numbers by 100: $0.84 \div 0.2 = 84 \div 20$.
2. 4 groups use $4 \times 20 = 80$, leaving $84 - 80 = 4$.
3. The leftover is $4/20 = 0.2$ of one group, so the result is 4.2.
4. Check $4.2 \times 0.2 = 0.84$.
5. $4.2 - 0.84 = 3.36 > 0$, because dividing into smaller-than-one groups increases the count.

Problem 7

1. Align the decimal points: write 0.48 and 0.70 to the same decimal place.
2. In hundredths, $48 + 70 = 118$.
3. Regroup: 118 hundredths is 100 hundredths plus 18 hundredths, or $1 + 0.18 = 1.18$.

Problem 8

1. Multiply both numbers by 10: $5.6 \div 0.8 = 56 \div 8$.
2. 7 groups use $7 \times 8 = 56$, leaving $56 - 56 = 0$.
3. Nothing is left, so the quotient is 7.
4. Check $7 \times 0.8 = 5.6$.
5. In the context, the result is 7 groups.

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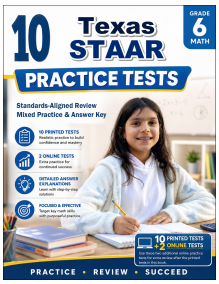

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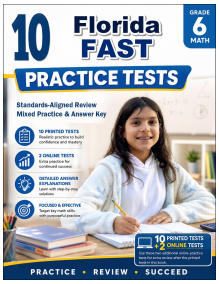

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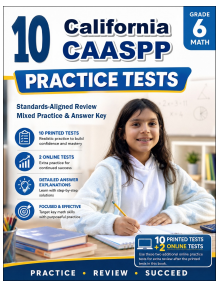

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