Solving Real-World Problems with Decimals

Solving Real-World Problems with Decimals: Find, Fix, and Work Backward

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

QUICK REVIEW

Choose the operation from the situation: combine with addition, find a difference with subtraction, repeat equal amounts with multiplication, and share or count groups with division. For 3 bottles of 0.75 L, $3 \times 0.75 = 2.25$ L; from 4 L, $4 - 2.25 = 1.75$ L remains.

Worked example

A jug contains 4.6 L. Three bottles take 0.8 L each. Find the remainder.

1. Used: $3 \times 0.8 = 2.4$ L.
2. Remaining: $4.6 - 2.4 = 2.2$ L.
3. $2.2 + 2.4 = 4.6$ L checks the total.
Answer: 2.2 L.

Practice Problems

Show your thinking.

1. A runner travels 2.45 km in the morning and 2 km later. The goal is 5 km. Find the distance still needed.

2. A student splits 7.2 L into 0.6 L bottles and writes $7.2 \div 6 = 1.2$ bottles. Correct both the scaling and the answer.

3. A 9.6 m rope is cut into 0.8 m pieces. Three pieces are used. How many pieces remain?

4. A 6.8 m ribbon is made from 4 equal pieces and a 0.4 m piece. Find the equal-piece length.

5. A bottle is filled from 0.65 L to 1.8 L. How much was added?

6. Find the missing length if 4 identical pieces and a 0.35 m offcut make a 5.15 m ribbon.

7. Two identical containers together hold 5.75 L of juice and 0.65 L of water. Find one container's volume when shared equally.

8. Design 6 equal portions from 4.5 kg of rice. Find each mass, then the mass of 2 portions.

Answer Key

1. 0.55 km.
2. 12 bottles.
3. 9 pieces.
4. 1.6 m.
5. 1.15 L.
6. 1.2 m.
7. 3.2 L.
8. 0.75 kg each; 1.5 kg for two.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Total traveled: $2.45 + 2 = 4.45$ km.
2. Remaining: $5 - 4.45 = 0.55$ km.

Problem 2

1. Scale both numbers: $7.2 \div 0.6 = 72 \div 6$.
2. $72 \div 6 = 12$ bottles.
3. $12 \times 0.6 = 7.2$ L checks the count.

Problem 3

1. $9.6 \div 0.8 = 12$ pieces initially.
2. $12 - 3 = 9$ pieces remain.
3. $9 \times 0.8 = 7.2$ m remains as a length check.

Problem 4

1. Equal pieces total $6.8 - 0.4 = 6.4$ m.
2. $6.4 \div 4 = 1.6$ m each.
3. $4 \times 1.6 + 0.4 = 6.8$ m checks the whole ribbon.

Problem 5

1. Added volume is $1.80 - 0.65 = 1.15$ L.
2. $0.65 + 1.15 = 1.80$ L verifies the change.

Problem 6

1. Usable length: $5.15 - 0.35 = 4.80$ m.
2. $4.80 \div 4 = 1.20$ m per piece.
3. $4 \times 1.20 + 0.35 = 5.15$ m.

Problem 7

1. Mixed volume: $5.75 + 0.65 = 6.40$ L.
2. $6.40 \div 2 = 3.20$ L per container.
3. $2 \times 3.20 = 6.40$ L checks the shares.

Problem 8

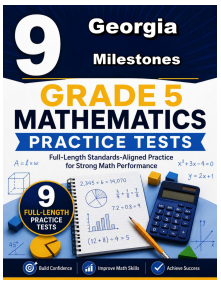
1. $4.5 \div 6 = 0.75$ kg per portion.
2. $2 \times 0.75 = 1.5$ kg for two portions.
3. $6 \times 0.75 = 4.5$ kg checks the design.

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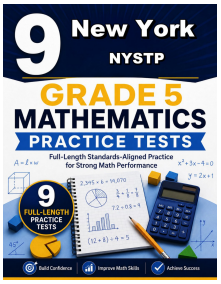
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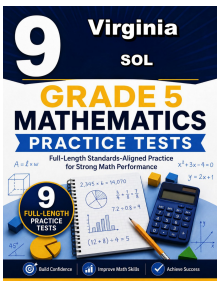
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