Solving Multi-Step Problems with Conversions

Solving Multi-Step Problems with Conversions: Find, Fix, and Work Backward

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Convert to one unit before combining or sharing. A 2 m rope with 30 cm removed has $2 \times 100 - 30 = 170$ cm left. Dividing that among 5 gives $170 \div 5 = 34$ cm each. Keep the unit after every step.

Worked example

A jug starts with 2.5 L of water and fills 5 bottles of 400 mL each. Find the milliliters left. Use 1 L $= 1000$ mL.

1. Start: $2.5 \times 1000 = 2500$ mL.
2. Used: $5 \times 400 = 2000$ mL.
3. Left: $2500 - 2000 = 500$ mL.
Answer: 500 mL.

Practice Problems

Show your thinking.

1. A child says 3 kg minus 450 g is 2.550 g. Correct the numerical value and unit in grams. Use 1 kg $= 1000$ g.

2. After 4 bottles of 350 mL are filled, a tank has 0.6 L left. Find its starting liters. Use 1000 mL $= 1$ L.

3. A trip totals 135 min. Travel takes 1.5 h. Find the remaining activity time in minutes. Use 1 h $= 60$ min.

4. A 6 ft board is cut into 9 in pieces. A student says it makes fewer than one piece because $6 \div 9 < 1$. Correct the count. Use 1 ft $= 12$ in.

5. Find the missing kilograms: a load plus 250 g has total mass 2.5 kg. Use 1 kg $= 1000$ g.

6. A student says 4 gal shared equally among 8 containers gives 2 qt per container. Verify with 1 gal $= 4$ qt.

Answer Key

1. 2550 g.
2. 2 L.
3. 45 min.
4. 8 pieces.
5. 2.25 kg.
6. Correct: 2 qt each.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. $3 \times 1000 = 3000$ g.
2. $3000 - 450 = 2550$ g.
3. $2550 \div 1000 = 2.55$ kg, not 2.550 g.

Problem 2

1. Bottles hold $4 \times 350 = 1400$ mL.
2. Remainder is $0.6 \times 1000 = 600$ mL.
3. Start: $(1400 + 600) \div 1000 = 2$ L.

Problem 3

1. Travel: $1.5 \times 60 = 90$ min.
2. Activity: $135 - 90 = 45$ min.
3. $90 + 45 = 135$ min checks it.

Problem 4

1. Convert: $6 \times 12 = 72$ in.
2. Piece count: $72 \div 9 = 8$.
3. $8 \times 9 = 72$ in checks the result.

Problem 5

1. Total is $2.5 \times 1000 = 2500$ g.
2. Load: $2500 - 250 = 2250$ g.
3. $2250 \div 1000 = 2.25$ kg.

Problem 6

1. Total: $4 \times 4 = 16$ qt.
2. Each: $16 \div 8 = 2$ qt.
3. $8 \times 2 = 16$ qt $= 4$ gal.

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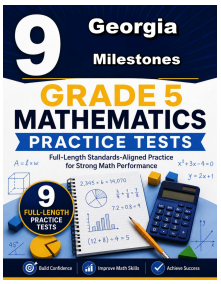

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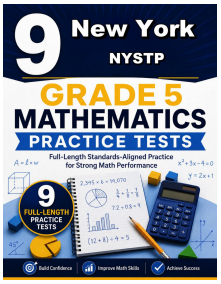

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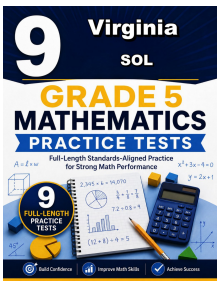

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