Converting Measurement Units

Converting Measurement Units: Apply, Compare, and Design

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

QUICK REVIEW

Within one system, multiply to use smaller units and divide to use larger units. Since 1 m $= 100$ cm, 2.5 m $= 2.5 \times 100 = 250$ cm, while 350 cm $= 350 \div 100 = 3.5$ m. Use the stated unit relationship, not the number of digits.

Worked example

Convert 1.5 L to mL. Use 1 L $= 1000$ mL.

1. One L contains 1000 mL; use more small units.
2. $1.5 \times 1000 = 1500$ mL.
3. Check: $1500 \div 1000 = 1.5$ L.
Answer: 1500 mL.

Practice Problems

Show your thinking.

1. A label shows 96 oz. Rewrite it in lb for a measuring tool. Use 1 lb $= 16$ oz.

2. A label must show exactly 28 qt, but it needs to use gal. What number belongs on the label? Check by converting back.

3. Compare 84 in and 8 ft. Which is greater, and by how much in ft?

4. A label shows 5 h. Rewrite it in min for a measuring tool. Use 1 h $= 60$ min.

5. A label must show exactly 1.75 L, but it needs to use mL. What number belongs on the label? Check by converting back.

6. Compare 2.25 kg and 2251 g. Which is greater, and by how much in g?

7. A label shows 250 cm. Rewrite it in m for a measuring tool. Use 1 m $= 100$ cm.

8. A student converts 3.5 km to m by dividing by 1000. Correct the operation and result.

Answer Key

1. 6 lb.
2. 7 gal.
3. 8 ft is greater by 1 ft.
4. 300 min.
5. 1750 mL.
6. 2251 g is greater by 1 g.
7. 2.5 m.
8. 3500 m.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. One lb contains 16 oz; group the small units.
2. $96 \div 16 = 6$ lb.
3. Check: $6 \times 16 = 96$ oz.

Problem 2

1. Recover the source measurement with the inverse: $28 \div 4 = 7$ gal.
2. One gal contains 4 qt; use more small units.
3. $7 \times 4 = 28$ qt.
4. Check: $28 \div 4 = 7$ gal.

Problem 3

1. One ft contains 12 in; group the small units.
2. $84 \div 12 = 7$ ft.
3. Check: $7 \times 12 = 84$ in.
4. $8 - 7 = 1$ ft.

Problem 4

1. One h contains 60 min; use more small units.
2. $5 \times 60 = 300$ min.
3. Check: $300 \div 60 = 5$ h.

Problem 5

1. Recover the source measurement with the inverse: $1.75 \times 1000 = 1750$ mL.
2. One L contains 1000 mL; group the small units.
3. $1750 \div 1000 = 1.75$ L.
4. Check: $1.75 \times 1000 = 1750$ mL.

Problem 6

1. One kg contains 1000 g; use more small units.
2. $2.25 \times 1000 = 2250$ g.
3. Check: $2250 \div 1000 = 2.25$ kg.
4. $2251 - 2250 = 1$ g.

Problem 7

1. One m contains 100 cm; group the small units.
2. $250 \div 100 = 2.5$ m.
3. Check: $2.5 \times 100 = 250$ cm.

Problem 8

1. One km contains 1000 m; use more small units.
2. $3.5 \times 1000 = 3500$ m.
3. Check: $3500 \div 1000 = 3.5$ km.

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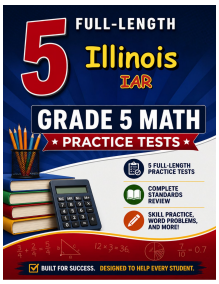

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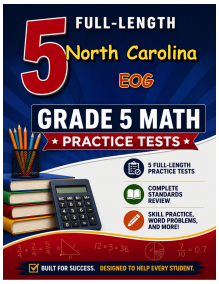

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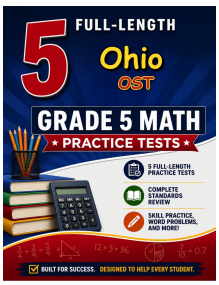

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