Converting Measurement Units

Converting measurement units: Applications and decisions

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

QUICK REVIEW

Multiply when converting a larger unit to a smaller unit, and divide in the other direction. Since 1 m $= 100$ cm, 2.4 m $= 2.4 \times 100 = 240$ cm. Since 60 min $= 1$ h, 150 min $= 150/60 = 2.5$ h. Use only the given conversion factors.

Worked example

Convert 3.5 m to cm using 1 m $= 100$ cm.

1. The conversion is 1 m $= 100$ cm.
2. $3.5 \times 100 = 350$ cm; reversing gives $350 \div 100 = 3.5$ m.
Answer: 350 cm.

Practice Problems

Show your thinking.

1. A jug contains 2.75 L. How many mL can be poured? 1 L $= 1000$ mL.

2. A ribbon is 108 inches. Find yards to order. 36 in $= 1$ yd.

3. A timer must run 3.5 minutes. Set it in seconds. 1 min $= 60$ s.

4. A load limit is measured in kg. Express a 2250 g package in kg. 1000 g $= 1$ kg.

5. For this project use 1 ft $= 30$ cm. Convert an 8-ft board to cm.

6. A 600-cm cable must span 5 m. Convert its length to m; is it long enough? 100 cm $= 1$ m.

7. A cable is 7.5 m. Find centimeters before cutting. 1 m $= 100$ cm.

8. A machine cycle lasts 480 s. Find minutes and check by multiplication. 60 s $= 1$ min.

Answer Key

1. 2750 mL.
2. 3 yd.
3. 210 s.
4. $\frac{9}{4}$ kg.
5. 240 cm.
6. 6 m. Yes, with 1 m to spare.
7. 750 cm.
8. 8 min.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The conversion is 1 L $= 1000$ mL.
2. $2.75 \times 1000 = 2750$ mL; reversing gives $2750 \div 1000 = 2.75$ L.

Problem 2

1. The conversion is 1 in $= \frac{1}{36}$ yd.
2. $108 \times \frac{1}{36} = 3$ yd; reversing gives $3 \div \frac{1}{36} = 108$ in.

Problem 3

1. The conversion is 1 min $= 60$ s.
2. $3.5 \times 60 = 210$ s; reversing gives $210 \div 60 = 3.5$ min.

Problem 4

1. The conversion is 1 g $= \frac{1}{1000}$ kg.
2. $2250 \times \frac{1}{1000} = \frac{9}{4}$ kg; reversing gives $\frac{9}{4} \div \frac{1}{1000} = 2250$ g.

Problem 5

1. The conversion is 1 ft $= 30$ cm.
2. $8 \times 30 = 240$ cm; reversing gives $240 \div 30 = 8$ ft.

Problem 6

1. The conversion is 1 cm $= \frac{1}{100}$ m.
2. $600 \times \frac{1}{100} = 6$ m; reversing gives $6 \div \frac{1}{100} = 600$ cm.
3. $6 - 5 = 1$ m remains, so the cable is long enough.

Problem 7

1. The conversion is 1 m $= 100$ cm.
2. $7.5 \times 100 = 750$ cm; reversing gives $750 \div 100 = 7.5$ m.

Problem 8

1. The conversion is 1 s $= \frac{1}{60}$ min.
2. $480 \times \frac{1}{60} = 8$ min; reversing gives $8 \div \frac{1}{60} = 480$ s.

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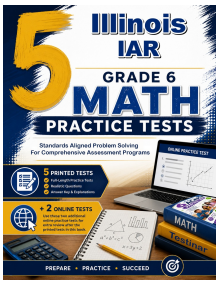

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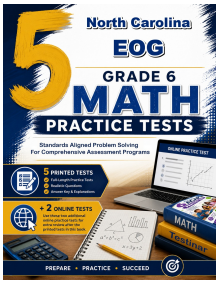

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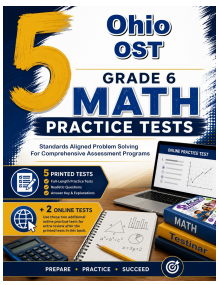

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