Converting Measurement Units

Converting measurement units: Models and calculations

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. Convert 4.2 km to meters. 1 km $= 1000$ m.

2. Convert 750 mL to liters. 1000 mL $= 1$ L.

3. Convert 2.25 hours to minutes. 1 h $= 60$ min.

4. Convert 84 inches to feet. 12 in $= 1$ ft.

5. A package weighs 5 lb. Find ounces. 1 lb $= 16$ oz.

6. Convert 36 cm to meters. Explain why the numerical value decreases. 100 cm $= 1$ m.

7. Convert 3.25 kg to grams. 1 kg $= 1000$ g.

8. Draw a conversion arrow from 144 in to feet, then compute. 12 in $= 1$ ft.

Answer Key

1. 4200 m.
2. $\frac{3}{4}$ L.
3. 135 min.
4. 7 ft.
5. 80 oz.
6. $\frac{9}{25}$ m.
7. 3250 g.
8. 12 ft.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. The conversion is 1 km $= 1000$ m.
2. $4.2 \times 1000 = 4200$ m; reversing gives $4200 \div 1000 = 4.2$ km.

Problem 2

1. The conversion is 1 mL $= \frac{1}{1000}$ L.
2. $750 \times \frac{1}{1000} = \frac{3}{4}$ L; reversing gives $\frac{3}{4} \div \frac{1}{1000} = 750$ mL.

Problem 3

1. The conversion is 1 h $= 60$ min.
2. $2.25 \times 60 = 135$ min; reversing gives $135 \div 60 = 2.25$ h.

Problem 4

1. The conversion is 1 in $= \frac{1}{12}$ ft.
2. $84 \times \frac{1}{12} = 7$ ft; reversing gives $7 \div \frac{1}{12} = 84$ in.

Problem 5

1. The conversion is 1 lb $= 16$ oz.
2. $5 \times 16 = 80$ oz; reversing gives $80 \div 16 = 5$ lb.

Problem 6

1. The conversion is 1 cm $= \frac{1}{100}$ m.
2. $36 \times \frac{1}{100} = \frac{9}{25}$ m; reversing gives $\frac{9}{25} \div \frac{1}{100} = 36$ cm.
3. A meter contains 100 centimeters, so the count of meters is $1/100$ as large.

Problem 7

1. The conversion is 1 kg $= 1000$ g.
2. $3.25 \times 1000 = 3250$ g; reversing gives $3250 \div 1000 = 3.25$ kg.

Problem 8

1. The conversion is 1 in $= \frac{1}{12}$ ft.
2. $144 \times \frac{1}{12} = 12$ ft; reversing gives $12 \div \frac{1}{12} = 144$ in.

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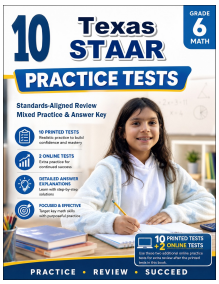

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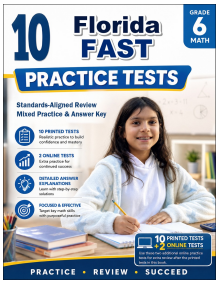

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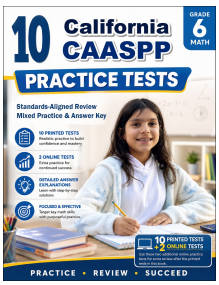

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