



Name \_\_\_\_\_ Date \_\_\_\_\_

# Changing Metric Units (pages 167–169)

To change from one metric unit to another, you either multiply or divide by powers of 10. The chart below shows the relationship between the metric units and the powers of 10.

	<p>To change from a larger unit to a smaller unit, you need to multiply. To change from a smaller unit to a larger unit, you need to divide.</p> <div style="text-align: center; margin-top: 10px;"> <p><b>MULTIPLY</b>    <math>\times 1,000</math>   <math>\times 100</math>    <math>\times 10</math></p> <p>km      m      cm      mm</p> <p><math>\div 1,000</math>   <math>\div 100</math>    <math>\div 10</math>      <b>DIVIDE</b></p> </div>
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## EXAMPLES

**A**  $1.5 \text{ L} = \underline{\quad ? \quad} \text{ mL}$

To change from liters to milliliters, multiply by 1,000 since  $1 \text{ mL} = 0.001 \text{ L}$ .

$$1.5 \times 1,000 = 1,500$$

$$1.5 \text{ L} = 1,500 \text{ mL}$$

**B**  $12 \text{ cm} = \underline{\quad ? \quad} \text{ m}$

To change from centimeters to meters, divide by 100 since  $1 \text{ m} = 100 \text{ cm}$ .

$$12 \div 100 = 0.12$$

$$12 \text{ cm} = 0.12 \text{ m}$$

## Try These Together

**Complete.**

1.  $3 \text{ kg} = \underline{\quad ? \quad} \text{ g}$

*HINT: Kilograms are larger units than grams; multiply.*

2.  $9 \text{ mm} = \underline{\quad ? \quad} \text{ cm}$

*HINT: Millimeters are smaller units than centimeters; divide.*

## PRACTICE

**Complete.**

- |   |  |   |
|---|--|---|
| 3. $4,860 \text{ mm} = \underline{\quad ? \quad} \text{ km}$  | 4. $\underline{\quad ? \quad} \text{ L} = 397 \text{ mL}$    | 5. $669 \text{ mm} = \underline{\quad ? \quad} \text{ cm}$  |
| 6. $\underline{\quad ? \quad} \text{ mg} = 0.0079 \text{ g}$  | 7. $8,170 \text{ mm} = \underline{\quad ? \quad} \text{ m}$  | 8. $\underline{\quad ? \quad} \text{ mL} = 7.6 \text{ L}$   |
| 9. $0.0034 \text{ kg} = \underline{\quad ? \quad} \text{ mg}$ | 10. $\underline{\quad ? \quad} \text{ mg} = 0.4 \text{ g}$   | 11. $460 \text{ mL} = \underline{\quad ? \quad} \text{ L}$  |
| 12. $\underline{\quad ? \quad} \text{ g} = 557 \text{ mg}$    | 13. $748 \text{ cm} = \underline{\quad ? \quad} \text{ m}$   | 14. $\underline{\quad ? \quad} \text{ mL} = 0.06 \text{ L}$ |
| 15. $1.68 \text{ km} = \underline{\quad ? \quad} \text{ cm}$  | 16. $\underline{\quad ? \quad} \text{ g} = 8.05 \text{ kg}$  | 17. $336 \text{ m} = \underline{\quad ? \quad} \text{ km}$  |
| 18. $\underline{\quad ? \quad} \text{ L} = 621 \text{ mL}$    | 19. $2,146 \text{ g} = \underline{\quad ? \quad} \text{ kg}$ | 20. $\underline{\quad ? \quad} \text{ cm} = 48 \text{ mm}$  |

21. **Food** A baby drinks 85 milliliters of juice a day. How many liters of juice does the baby drink in a week?



22. **Standardized Test Practice** How many centimeters are in 0.082 kilometers?

**A** 8.2

**B** 82

**C** 8,200

**D** 82,000

**Answers:** 1. 3,000 2. 0.9 3. 0.00486 4. 0.397 5. 66.9 6. 7.9 7. 8.17 8. 7,600 9. 3,400 10. 400 11. 0.46 12. 0.57 13. 7.48 14. 60 15. 168,000 16. 8,050 17. 0.336 18. 0.621 19. 2.146 20. 4.8 21. 0.595 L 22. C