

**Do you know HOW?**

Solve each proportion.

1. $\frac{8}{k} = -\frac{12}{30}$

2. $\frac{3}{5} = \frac{y+1}{9}$

Solve each equation. Check your answer.

3. $3w + 2 = w - 4$

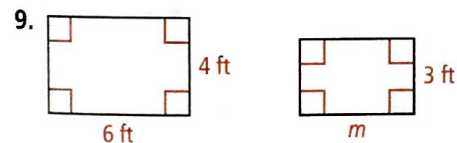
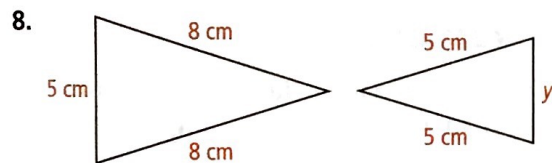
4. $\frac{1}{4}(k - 1) = 7$

5. $6y = 12.8$

6. $\frac{5n+1}{8} = \frac{3n-5}{4}$

7. **Bicycling** You are riding your bicycle to prepare for a race. It takes you 12 min to go 2.5 mi. What was your speed in miles per hour?

The figures in each pair are similar. Find the missing length.



10. **Shadows** In the late afternoon, a 3.5-ft child casts a 60-in. shadow. The child is next to a telephone pole that casts a 50-ft shadow, forming similar triangles. How tall is the telephone pole?

Tell whether each percent change is an increase or decrease. Then find the percent change.

11. original amount: \$5000
new amount: \$6500
12. original amount: 150 lb
new amount: 135 lb

Define a variable and write an equation to model each situation. Then solve.

13. **Farming** You have 100 ft of fencing to build a circular sheep pen.
- What is the diameter of the largest pen you can build? Use 3.14 for π .
 - What is the area of the largest pen you can build?
14. **Maps** The scale on a map is 1 in. : 25 mi. You measure 6.5 in. between two towns. What is the actual distance?
15. **Birds** In a bird sanctuary, 30% of the birds are hummingbirds. If there are about 350 birds in the sanctuary at any given time, how many are hummingbirds?

Do you UNDERSTAND?

- © 16. **Reasoning** Explain which is more accurate: measuring to the nearest millimeter or to the nearest eighth of an inch.
- © 17. **Writing** A 30-pack of blank CDs costs \$9.50. A 50-pack of blank CDs costs \$13. How can you tell which is the better buy?
- © 18. **Error Analysis** Average attendance at a school's basketball games increased from 1000 to 1500 last year. One student said that represented a 150% increase. Explain the student's error. What was the actual percent increase?