

# Lesson 1 Problem-Solving Practice

## Equations

**INSECTS** For Exercises 1–3, use the table that gives the average lengths of several unusual insects in centimeters. Use mental math or the *guess, check, and revise* strategy.

Insect	Length (cm)	Insect	Length (cm)
Walking stick	15	Giant water bug	6
Goliath beetle	15	Katydid	5
Giant weta	10	Silkworm moth	4
Harlequin beetle	7	Flower mantis	3

1. The equation  $15 - x = 12$  gives the difference in length between a walking stick and one other insect. If  $x$  is the other insect, which insect is it?

2. The equation  $7 + y = 13$  gives the length of a harlequin beetle and one other insect. If  $y$  is the other insect, which insect makes the equation a true sentence?
3. Bradley found a silkworm moth that was 2 centimeters longer than average. The equation  $m - 4 = 2$  represents this situation. Find the length of the silkworm moth that Bradley found.

4. **BUTTERFLIES** A Monarch butterfly flies about 80 miles per day. So far it has flown 60 miles. In the equation  $80 - m = 60$ ,  $m$  represents the number of miles it has yet to fly that day. Find the solution to the equation.
5. **CICADAS** The nymphs of some cicada can live among tree roots for 17 years before they develop into adults. One nymph developed into an adult after only 13 years. The equation  $17 - x = 13$  describes the number of years less than 17 that it lived as a nymph. Find the value of  $x$  in the equation to tell how many years less than 17 years it lived as a nymph.

6. **BEETLES** A harlequin beetle lays eggs in trees. She can lay up to 20 eggs over 2 or 3 days. After the first day, the beetle has laid 9 eggs. Solve the equation  $9 + e = 20$  to find  $e$ , the number of eggs she will lay during the second and third days.

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