▦ SKILL 8: PROBLEM SOLVING:
Draw a Diagram

Solving a problem can often be easier if you draw a diagram or picture to help you understand the problem.

Example

Marti has Sunday off, then works Monday through Saturday, so she has a day off once every 7 days. She needs to give her dog some medicine every 3 days. How often does she give her dog medicine on her day off?

Read   Marti's days off occur every 7 days. Her dog needs medicine every 3 days.

Plan   Draw a diagram of several weeks on a calendar. Label her days off with "Off." Label the days her dog needs medicine with "M."

Solve   Start with a Sunday she is off and she gives medicine. Find the next day that this happens.

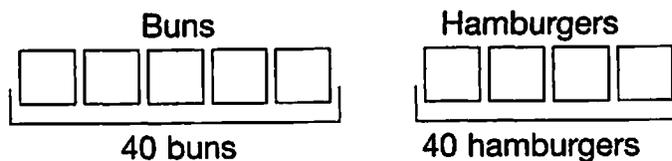| Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Off/M			M			M
Off		M			M	
Off	M			M		
Off/M						

Twenty-one days later, Marti has a day off and her dog needs medicine. She gives her dog medicine on her day off every 21 days.

Look Back   Does your answer makes sense? The least common multiple of 7 and 3 is 21. It makes sense that an event occurring every 7 days and another event occurring every 3 days will occur together on the LCM of 7 and 3.

Guided Practice

Ari is buying buns and hamburgers for a picnic. Buns come 8 to a package. Hamburgers come 10 to a package. Ari would like to buy exactly as many hamburgers as buns.

1. Fill in the diagram with the number of items per package to illustrate the fewest number of packages of each item Ari should buy.

Buns   Hamburgers

☐ ☐ ☐ ☐ ☐   ☐ ☐ ☐ ☐

40 buns   40 hamburgers

2. How many buns and hamburgers will he buy? _____

3. How many packages of each will this be?

     ____ packages of buns; ____ packages of hamburgers

SKILL 8: Practice

Solve each problem.

1. The bookstore sells packages of 15 pens each and 12 pencils each. They want the same number of pens and pencils in their next order. Find the smallest number of packages of each they can buy.

_____

_____

2. Ms. Ling's chemistry class uses 10-gram weights and 25-gram weights on a balance scale. What is the smallest number of each needed to balance the scale?

_____

3. Freida wants to use the same number of black beads and white beads for a project. Black beads come in bags of 20. White beads come in bags of 15. What is the least number of bags of each color she can use?

_____

4. All Sport Outdoor Store sells fruit energy bars in 6-bar packages. They also sell nut energy bars in 4-bar packages. If the store wants to order the same number of bars of both kinds, what is the least number of packages of each they can order?

_____

5. The traffic signal at 4th and Main turns green every 6 minutes. The signal at 5th and Broadway turns green every 4 minutes. If both turned green at 12:15 P.M., when are the next three times that both will turn green at the same time?

_____

_____

TEST PREP

6. Boxes that are 10 inches tall are stacked next to boxes that are 12 inches tall. Find the least number of each size box that could be stacked next to each other so that the stacks are the same height.

Skill 7

   A two 10-in. and two 12-in.

   B twelve 10-in. and ten 12-in.

   C six 10-in. and five 12-in.

   D five 10-in. and six 12-in.

7. Find the GCF of 14 and 24.

Skill 6

   F 168   **H** 2

   G 3   **J** 38

Section A: Factors and Multiples