



# 2-6 Problem-Solving Strategy: Look for a Pattern (Pages 94–97)

You can solve many problems by looking for a pattern.

## EXAMPLE

Use the pattern below to find  $63 \times 67$ .

$$\begin{aligned} 3 \times 7 &= 21 \\ 13 \times 17 &= 221 \\ 23 \times 27 &= 621 \\ 33 \times 37 &= 1221 \end{aligned}$$

As you look at the products of the simpler problems, observe the patterns in the factors. In each successive product, each factor is increased by 10. To find the product of 63 and 67, extend the pattern.

Now look at the products. Each product has 21 as the last two digits. The digits before 21 follow the pattern 0, 2, 6, 12. Take a close look at this pattern and extend it.

$$\begin{array}{ccccccc} 0 & 2 & 6 & 12 & 20 & 30 & 42 \\ \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \curvearrowright & \\ +2 & +4 & +6 & +8 & +10 & +12 & \end{array}$$

With this extension, you know the first two digits of each product. You already know the last two digits are 21. Extend the pattern.

$$\begin{aligned} 43 \times 47 &= 2021 \\ 53 \times 57 &= 3021 \\ 63 \times 67 &= 4221 \end{aligned}$$

## PRACTICE

*Solve. Use any strategy.*

- If you toss a coin once, there are two ways it can land: H (heads) or T (tails). If you toss the coin twice, there are 4 possible outcomes: HH, HT, TH, or TT. How many outcomes are possible if you toss the coin 6 times?
- Fill in the blanks in this pattern. C H M
- What is the sum of all whole numbers from 1 to 50, inclusive?



4. **Standardized Test Practice** On May 1, Louie had a science club meeting and a violin lesson. He has a science club meeting every 7 days and a violin lesson every 3 days. What is the next day when he will have a science club meeting and a violin lesson on the same day?

- A** May 10                      **B** May 14                      **C** May 21                      **D** May 22

Answers: 1.  $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ , or 64 outcomes    2. F, W    3. 1275    4. D