

## Section 1.1

## 1

**Inductive reasoning** is the process of arriving at a general conclusion based on observations of specific examples.

- The conclusion is called a **conjecture or a hypothesis**.
- A case for which a conjecture is false is called a **counterexample**.

Example 1: Find a counterexample to show that the statement: The product of two two-digit numbers is a three-digit number is false.

Example 2: Identify a pattern in each list of numbers. Then use this pattern to find the next number.

- 3, 9, 15, 21, \_\_\_\_\_
- 2, 10, 50, 250, \_\_\_\_\_
- 3, 6, 18, 72, 144, 432, 1728, \_\_\_\_\_
- 1, 9, 17, 3, 11, 19, 5, 13, 21, \_\_\_\_\_
- 1, 3, 4, 7, 11, 18, 29, 47, \_\_\_\_\_

Example 3: Describe two patterns in this sequence of figures. Use the patterns to draw the next figure in the sequence.

