2-1   Skills Practice
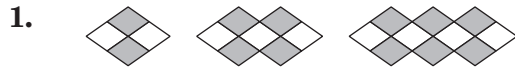
Inductive Reasoning and Conjecture

Write a conjecture that describes the pattern in the sequence. Then use your conjecture to find the next item in the sequence.

1.

2. $-4, -1, 2, 5, 8$ 3. $6, \frac{11}{2}, 5, \frac{9}{2}, 4$ 4. $-2, 4, -8, 16, -32$

Make a conjecture about each value or geometric relationship.

5. Points A, B, and C are collinear, and D is between B and C.

6. Point P is the midpoint of $\overline{NQ}$.

7. $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$ form four linear pairs.

8. $\angle 3 \cong \angle 4$

Determine whether each conjecture is *true* or *false*. Give a counterexample for any false conjecture.

9. If $\angle ABC$ and $\angle CBD$ form a linear pair, then $\angle ABC \cong \angle CBD$.

10. If $\overline{AB}$, $\overline{BC}$, and $\overline{AC}$ are congruent, then A, B, and C are collinear.

11. If $AB + BC = AC$, then $AB = BC$.

12. If $\angle 1$ is complementary to $\angle 2$, and $\angle 1$ is complementary to $\angle 3$, then $\angle 2 \cong \angle 3$.