Additional Practice 9.5

Give the next term in each sequence.

1. 7, 11, 15, 19, . . .

    23

2. 80, 40, 20, 10 . . .

    5

3. ☐○☐☐ ○☐ ☐☐○ ☐☐☐

    ☐

4.
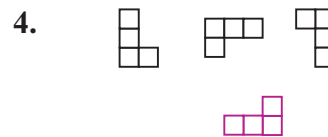
5. Draw a counterexample to disprove the statement: *All squares are congruent*.

6. Fran noticed that $2 \times 6 = 12$, $8 \times 4 = 32$, and $6 \times 6 = 36$ and conjectured that if a product of two numbers is even, both of the factors must be even. Give a counterexample to prove her conjecture is false.

    $5 \times 6 = 30$

7. When Todd visited his grandmother he saw six vehicles drive by the house. Each of the vehicles was white. When Todd went home, he told his friends that everybody in his grandmother's neighborhood drove a white vehicle. Explain what type of reasoning Todd used to make this conclusion.

Inductive reasoning: Todd went from specific to general. The conclusion was based on observation only.

8. Lines *a* and *b* are parallel. Use deductive reasoning to prove that $\angle 1 \cong \angle 3$.

$\angle 1 \cong \angle 2$ because they are vertical angles, and vertical angles are congruent. $\angle 2 \cong \angle 3$ because they are corresponding angles, and corresponding angles are congruent when a transversal cuts two parallel lines. Since $\angle 1$ and $\angle 2$ have the same measure, $\angle 1 \cong \angle 3$.