Name

3-6A Lesson Master

Questions on SPUR Objectives
See Student Edition pages 215–219 for objectives.

VOCABULARY

In 1–3, refer to the box at the right where a recursive definition for a sequence is given in both words and algebraic notation. Identify the part of the algebraic definition that corresponds to each phrase.

The first term of a sequence is 12. From the second term on, each term is seven more than the previous term.

$$\begin{cases} t_1 = 12 \\ t_n = t_{n-1} + 7 \text{ for integers } n \geq 2 \end{cases}$$

1. "The first term" _____

2. "the previous term" _____

3. "From the second term on" _____

SKILLS Objective D

In 4 and 5, write the first five terms of the sequence.

4. $\begin{cases} d_1 = 36 \\ d_n = \frac{d_{n-1}}{3} \text{ for integers } n \geq 2 \end{cases}$

5. $\begin{cases} t_1 = 1 \\ t_{n+1} = (t_n)^2 + 1 \text{ for integers } n \geq 1 \end{cases}$

6. Write a recursive formula for a sequence with first term –3 where each term is one less than the previous term. _____

7. Write a recursive formula for a sequence with first term 200 where each term is four-fifths of the previous term. _____

USES Objective L

8. You buy eight bags of candy for a party. Each bag has 60 pieces. Unfortunately, your little sister eats eight pieces each day. Write a recursive formula for the number of pieces of candy you have left on day n. _____

9. Allison opens a bank account with \$500. Every year, she receives 2% interest on the account, then adds another \$100. A recursive formula for her account balance at the beginning of year n is given at the right. Find her balance at the beginning of year four.

$$\begin{cases} t_1 = 500 \\ t_n = 1.02t_{n-1} + 100 \text{ for integers } n \geq 2 \end{cases}$$

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