

Name _____

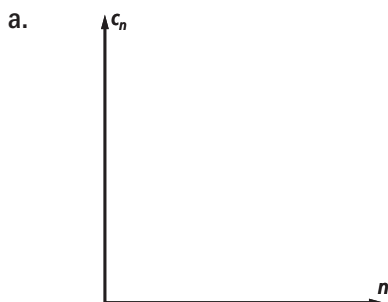
2-7 Lesson Master

Questions on SPUR Objectives
See Student Edition pages 142–145 for objectives.

PROPERTIES Objective E

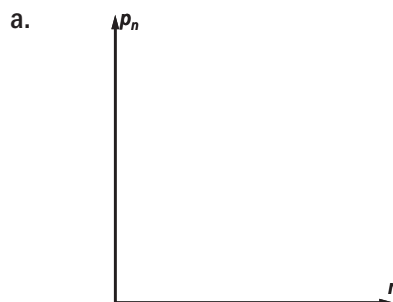
In 1 and 2, a recursive formula for a sequence is given. a. Graph the first 10 terms of the sequence. b. Describe the end behavior of the sequence.

1.
$$\begin{cases} c_1 = 12 \\ c_{n+1} = 0.8c_n, \text{ for integers } n \geq 1 \end{cases}$$



b. _____

2.
$$\begin{cases} p_0 = 25 \\ p_n = p_{n-1} + 1.2p_{n-1}\left(1 - \frac{p_{n-1}}{10,000}\right) \end{cases}$$



b. _____

USES Objective F

3. Suppose that the sequence in Question 1 above models the maximum height c_n of a bouncing ball in feet after it has hit the ground n times.

a. Find the maximum height of the ball after it hits the ground for the first time, the sixth time, and the tenth time. _____

b. Describe what the end behavior of this sequence means in terms of the bouncing ball.

4. Suppose the sequence in Question 2 above models the population p_n of a colony of brine shrimp after n days.

a. How many brine shrimp were in the initial population? _____

b. How many brine shrimp were there after 4 days? _____

c. According to this model, what is the maximum number of brine shrimp the environment can support? Justify your answer. _____
