Recursive Formulas from Tables and Contexts

Directions: Find the common ratio when needed and write a recursive formula. Do not forget to include the first term. Show all work.

1. The table shows the number of milligrams of medication in a patient's system at the end of each hour.

Hour	1	2	3	4
Milligrams	8100	2700	900	300

Find the common ratio and write a recursive formula to model the situation. Do not forget to include the first term.

2. The table shows the number of people infected at the end of each week.

Week	1	2	3	4
People Infected	18	54	162	486

Find the common ratio and write a recursive formula to model the situation. Do not forget to include the first term.

3. The table shows the value of a machine at the end of each year.

Year	1	2	3	4
Machine Value	16000	8000	4000	2000

Find the common ratio and write a recursive formula to model the situation. Do not forget to include the first term.

4. The table shows the number of points earned at the end of each round.

Round	1	2	3	4
Points	5	20	80	320

Find the common ratio and write a recursive formula to model the situation. Do not forget to include the first term.

5. A population has 80 organisms at the end of hour 1 and increases by 25% each hour. Write a recursive formula.

6. A medication contains 1800 mg at the end of hour 1 and decreases by 20% each hour. Write a recursive formula.

7. A video has 30 views at the end of day 1 and triples each day. Write a recursive formula.

8. A radioactive sample has 900 grams at the end of day 1 and one third remains each day. Write a recursive formula.

9. A sequence has recursive formula $a_1 = 8, \quad a_n = 5a_{n-1}$. What is the common ratio? Write the first five terms.

10. A sequence has recursive formula $a_1 = 96, \quad a_n = \frac{1}{2}a_{n-1}$. What is the common ratio? Write the first five terms.