Unit 1 Lesson 10: Situations and Sequence Types

1 Describing Growth (Warm up)

Student Task Statement

1. Here is a geometric sequence. What is the growth factor? 16, 24, 36, 54, 81
2. One way to describe its growth is to say it's growing by ____% each time. What number goes in the blank for the sequence 16, 24, 36, 54, 81? Be prepared to explain your reasoning.

2 Finding Population Patterns

Student Task Statement

The table shows two animal populations growing over time.

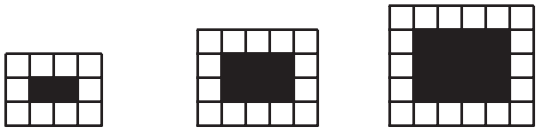
years since 1990	Population A	Population B
0	23,000	3,125
1	29,000	3,750
2	35,000	4,500
3	41,000	5,400
4	47,000	6,480

1. Are the sequences represented by Population A and Population B arithmetic or geometric? Explain how you know.
2. Write an equation to define Population A.
3. Write an equation to define Population B.
4. Does Population B ever overtake Population A? If so, when? Explain how you know.

3 Finding Square Patterns

Student Task Statement

Define the sequence W so that $W(n)$ is the number of white squares in Step n, and define the sequence B so that $B(n)$ is the number of black squares in Step n.



Step 1 Step 2 Step 3

1. Are the sequences W and B arithmetic, geometric, or neither? Explain how you know.
2. Write an equation for sequence W.
3. Write an equation for sequence B.
4. Is the number of black squares ever larger than the number of white squares? Explain how you know.