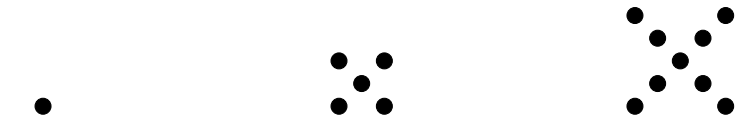
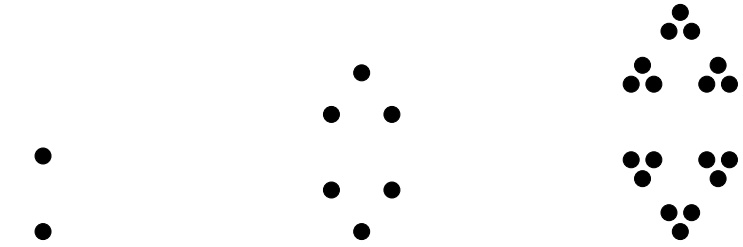
Activity 1: Dots

For the patterns of dots below, draw the next pattern in the sequence. Then give a recursive definition and a closed formula for the number of dots in the nth pattern.



$n = 0$ $n = 1$ $n = 2$



$n = 0$ $n = 1$ $n = 2$

$n = 1$ $n = 2$ $n = 3$ $n = 4$

Activity 2: Sequences

For each sequence of numbers, guess the next term in the sequence. Then find a recursive definition and closed formula for the nth term of the sequence. Assume the first term given is a_0.

- 3, 6, 12, 24, ...

- 2, 5, 8, 11, ...

- 4, 12, 20, 28, ...

- 4, 12, 36, 108, ...

- 2, 5, 10, 17, 26, ...