

Review Practice Problems 9.1-9.3

1. Prove by induction that  $5 \cdot 3^n - 3$  is an explicit formula for the recursively defined function:

$$S_n = 3S_{n-1} + 6 \quad \text{where } S_0 = 2$$

2. Use the method of iteration to find an explicit formula for the function:

$$S_n = 5S_{n-1} + 3 \quad \text{where } S_0 = 4$$

3. Given that an explicit formula for a linear difference equation will be of the form  $A \cdot x^n + B$ , find an explicit formula for the function:

$$S_n = 7S_{n-1} + 5 \quad \text{where } S_0 = 3$$