- We have the formula that

$$h_{n+1} = 0.8 \cdot h_n.$$

- We want to show that

$$\forall n \in \mathbb{N}, h_n = (0.8)^n \cdot h_0.$$

- We check for $n = 1 : h_1 = (0.8) \cdot h_0$ by definition.
- Now assume that

$$h_k = (0.8)^k \cdot h_0$$

Then we compute

$$h_{k+1} = (0.8) \cdot h_k = (0.8) \cdot (0.8)^k \cdot h_0 = (0.8)^{k+1} \cdot h_0.$$