

Another Strong Induction problem

Let $g : \mathbb{Z}^+ \rightarrow \mathbb{Z}$ be defined by

- ▶ $g(1) = 1$
- ▶ $g(2) = 3$
- ▶ $g(n) = g(n - 2)$ if $n \geq 3$

For this function g :

- ▶ Write down $g(n)$ for all $n = 1, 2, \dots, 10$
- ▶ Guess a closed form solution for $g(n)$ (use your base cases!)
- ▶ What is your inductive hypothesis? (State this carefully!)
- ▶ Prove your closed form solution true by strong induction.