

Find a Function $F: \mathbb{Z} \rightarrow \mathbb{Z}$ s.t. $f(f(n)) = -n \quad \forall n \in \mathbb{Z}$

Define f s.t.

$$0 \mapsto 0$$

$$2n \mapsto -2n-1 \quad \text{for } n=1,2,3,\dots$$

$$2n+1 \mapsto 2n \quad \text{for } n=0,1,2,3,\dots$$

$$-2n \mapsto 2n+1 \quad \text{For } n=1,2,3,\dots$$

$$-2n-1 \mapsto -2n \quad \text{For } n=0,1,2,3,\dots$$

In words: 0 goes to 0

positive even goes to negative odd

positive odd goes to positive even

negative even goes to positive odd

negative odd goes to negative even