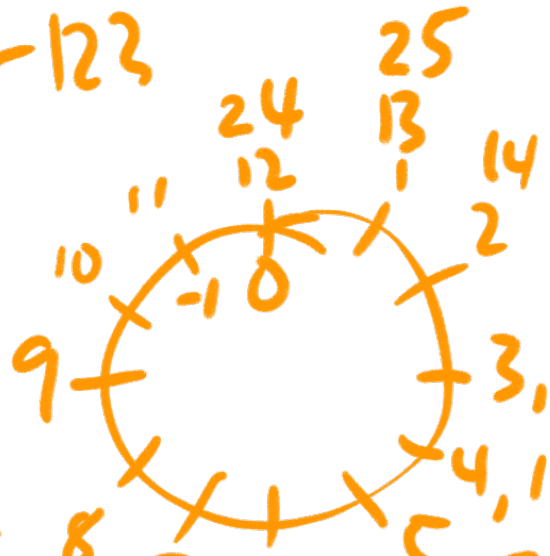
Eng 123

L17



Clock arithmetic

$x-y$ is a multiple of 12.

This is an equivalence relation.

Classes → $[1]_R = \{1, 13, 25, \ldots\}$

etc... → $[2]_R = \{2, 14, 26, \ldots\}$

ReverseHelper

$([L_1, \ldots, L_m], [S_1, \ldots, S_n])$

$= [L_m, L_{m-1}, \ldots, L_1, S_1, \ldots, S_n]$

In tut extra's, prove by induction that $n(n+1)$ is even, for $n \geq 0$

Try to prove, for all $n \in \mathbb{Z}$ without induction.

Proof Direct proof

Case 1: n is even

Case 2: n is odd

1) n is even $\rightarrow n = 2t$, $t \in \mathbb{Z}$

$n(n+1) = 2t(2t+1)$

$= 2[t(2t+1)]$

If n is odd $\rightarrow n = 2t+1$, $t \in \mathbb{Z}$

$n(n+1) =$