

The MU-Puzzle

MI \rightarrow MU

Rule 1: If you possess a string whose last letter is I, add U.

Rule 2: Suppose you have Mx, you may add Mxx.

Rule 3: If III occurs in one of the strings, you may make a new string with U in place of III.

Rule 4: If UU, you can drop it.

MI

MII *Mxx*

MIII *Mxx*

MIIIIIIII *Mxx*

MUIIU *MIU*

\emptyset

MI \rightarrow use *Mxx* rule ∞ times

MIIII...

I's are always a multiple of 2, thus not divisible by 3.

MUUU

MIII

Rule 1 does not affect # of I's.

Rule 2 does not give divisible by 3.

Rule 3 does not change the # of I's.

Rule 4 does not change the # of I's.

Bottom line, you will never get rid of all of the I's.