

```

|----- MODULE malgtd1ex10last -----|

EXTENDS Naturals, Integers, TLC
CONSTANTS x0, y0, z0, UND
VARIABLES x, y, z, pc

|-----|
| Auxiliary definitions |
|  $typeInt(u) \triangleq u \in Int$  |
|  $pre \triangleq \wedge x0 \in Int \wedge y0 \in Int$  |
|  $\wedge x0 = 11 \wedge y0 = 13 \wedge z0 = UND$  |
|-----|
| Interpretation: w assume that the precondition can hold and we have to find possible values for x0,y0, z0 to validate or not |
ASSUME pre

|-----|
| Action for transitioon of the algorithm |
|  $al1l2 \triangleq$  |
|  $\wedge pc = \text{"l1"}$  |
|  $\wedge pc' = \text{"l2"}$  |
|  $\wedge z' = x$  |
|  $\wedge x' = z$  |
|  $\wedge y' = z'$  |
|-----|
| Computations |
|  $Next \triangleq al1l2 \vee UNCHANGED \langle x, y, z, pc \rangle$  |
|  $Init \triangleq pc = \text{"l1"} \wedge x = x0 \wedge y = y0 \wedge z = z0 \wedge pre$  |
|-----|
| Checking the annotation by checking the invariant i derived from the annotation |
|  $i \triangleq$  |
|  $\wedge pc = \text{"l1"} \Rightarrow x = x0 \wedge y = y0 \wedge pre$  |
|  $\wedge pc = \text{"l2"} \Rightarrow x = 26 \div 2 \wedge y = 33 \div 3$  |
|  $safe \triangleq i$  |
|-----|

\ * Modification History
\ * Last modified Wed Feb 23 08:31:14 CET 2022 by mery
\ * Created Wed Sep 09 18:19:08 CEST 2015 by mery

```