

```

|----- MODULE apex1_1 -----|
| modules de base importables |
| EXTENDS Naturals, Integers, TLC |
|-----|
| CONSTANTS max |
|-----|
| VARIABLES np |
|-----|
| tentative 1 |
| entrer  $\triangleq$  |
|    $\wedge$  TRUE |
|    $\wedge np' = np + 1$  |
| sortir  $\triangleq np' = np - 1$  |
| next1  $\triangleq entrer \vee sortir$  |
| Init  $\triangleq np = 0$  |
|-----|
| tentative 2 |
| entrer2  $\triangleq np < max \wedge np' = np + 1$  |
| next2  $\triangleq entrer2 \vee sortir$  |
|-----|
| tentative 3 |
| sortir2  $\triangleq np > 0 \wedge np' = np - 1$  |
| next3  $\triangleq entrer2 \vee sortir2$  |
|-----|
| Safety1  $\triangleq np \in Int$  |
| Safety2  $\triangleq np \leq max$  |
| Safety3  $\triangleq np \geq 0$  |
| qq  $\triangleq np \neq 89$  |
| |
| Safety  $\triangleq Safety1 \wedge Safety2 \wedge Safety3$  |
| Check  $\triangleq rte$  |
| Test  $\triangleq Safety$  |
|-----|

```