

Puzzle 3

A king has his birthday. So he decides to let go some of his prisoners. He actually has 100 prisoners at the moment. They are each in a separate cell, numbered from 1 to 100. Well, he is a high tech king. He can close or open any prison door by a single click on the cell's number on his royal laptop. When he clicks at a locked door, it opens. When he clicks at an open door, it locks. At the beginning, every door is locked.

First the king clicks on every number from 1 to 100 (therefore opening every door).

Then he clicks on every second number from 1 to 100, (i.e. 2, 4, 6, 8, 10, . . .).

Then he clicks on every third number. (i.e. 3, 6, 9, 12, . . .) Now he is opening some doors, locking others.

Then he clicks on every fourth number. (i.e. 4, 8, 12, 16,)

Then on every fifth....

And so on, every sixth, every seventh, etc.

Until every 100th; finally, he only clicks on the number 100. Then he orders that the prisoners that find their door open may go free.

Who gets to go and who has to stay?