

**Task9** Ann and Bob

(2 points)

**Deadline:** Monday 22.5. 2017 9:00 am

**Ann** and **Bob** take part in a quiz in which everyone knows that the organizer first selects from an urn a natural number  $n < 10$ , that he writes on the forehead of one of the players and continues by writing the neighboring number (either  $n+1$  or  $n-1$ ) on the forehead of the second player. Neither **Ann** nor **Bob** knows her/his number – each sees only the other's forehead. They can take turns in announcing nothing but „*I do not know my number.*“ or „*I know my number.*“ Suppose **Ann** starts and she can see the symbol **5**.

- Who will be the first to identify her/his number?

Demonstrate your conclusion about the winner using the corresponding Kripke structure and its modification during information exchange between **A** and **B**.