Testataufgabe Block 02 - Adrian Willi

Three missionaries and three cannibals are on one side of a river that they wish to cross. Aboat is available that can hold at most two people. You must never leave a group of missionaries outnumbered by cannibals on the same bank (and in the boat on the side of this bank)

a) how the sets of states is described

a state can be described as follows

(Missionaries, Cannibals, Boats) — Number representing M, C, B on the bank of the from which they started.

b) what the initial state is

initial state (3,3,1)

c) the successor function

Result ((3,3,1), (3,1,0)) = (3,1,0)

We can transport 1 or 2 M or C on the same time.

d) the goal test

reached state (0,0,0)

e) Draw a diagram of the state space and derive an action sequence in your representation that brings everyone safely to the opposite bank

(3,3,1) → (3,1,0) → (3,2,1) → (3,0,0) → (3,1,1) → (1,1,0) → (2,2,1) → (0,2,0) →
(0,3,1) → (0,1,0) → (0,2,1) → (0,0,0)