

# KR-IST - Lecture 3b: Knowledge Test

*Chris Thornton*

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## Question

The Missionaries and Cannibals problem is described as follows. On one side of a river there are three missionaries and three cannibals. There is a boat which can be used to transfer people from one side to the other. No more than two people can fit in the boat at any one time, and it has to have at least one person in it during any crossing. The problem is to find the shortest sequence of crossings which gets all six people from one side to the other without ever creating a situation where cannibals outnumber missionaries on either side of the river.

What is the first thing we need to do in order to solve this problem using search?

What is the second thing?

What is the third?

## Question

You have 99 pounds of debt accumulated on your credit card. The annual rate of interest on this card is 16% for debt under 110 pounds of debt and 25% otherwise. The problem is to decide whether it is worth transferring the debt to another card. Card A offers 8% for debt under 125 pounds and 35% for anything over that. Card B offers 18% for debt under 150 pounds and 23% for anything over that. You can only transfer your debt once per year and the rules are you have to transfer all of it in one go at a cost of 10 pounds. You never make any payments but (for some reason) no penalties or other charges are applied for this.

What would be a suitable representation for states in this problem?

How would you generate successors?