Q1.

1. **Draw the transition diagram for M.**

图示

描述已自动生成

1. **Use the forward algorithm to manually compute the probability of the string cab. Show all your work.**

**Initialization:**

**Recursion:**

**1.**

**2.**

**Termination:**

1. **Use the Viterbi algorithm to manually compute the most likely hidden state sequence for the word cab. Show all your work, and report both the state sequence and its probability.**

**Initialization:**

**Recursion:**

**1.**

Therefore, ,

**2.**

Therefore, ,

**Termination**

Therefore, the state sequence is and its probability is .