Q3. Hidden Markov Model

a. Count the number of parameters to define the initial distribution, the transition distribution, and the emission distribution.

Initial distribution: k-1

Transition distribution: k(k-1)

Emission distribution: k(m-1)

Total: Sum of all three =

b. Does the number of parameters depend on the number of states? Briefly justify your answer

No it depends on the number of values the states can take.

c. (The future is independent of the past, given the present)