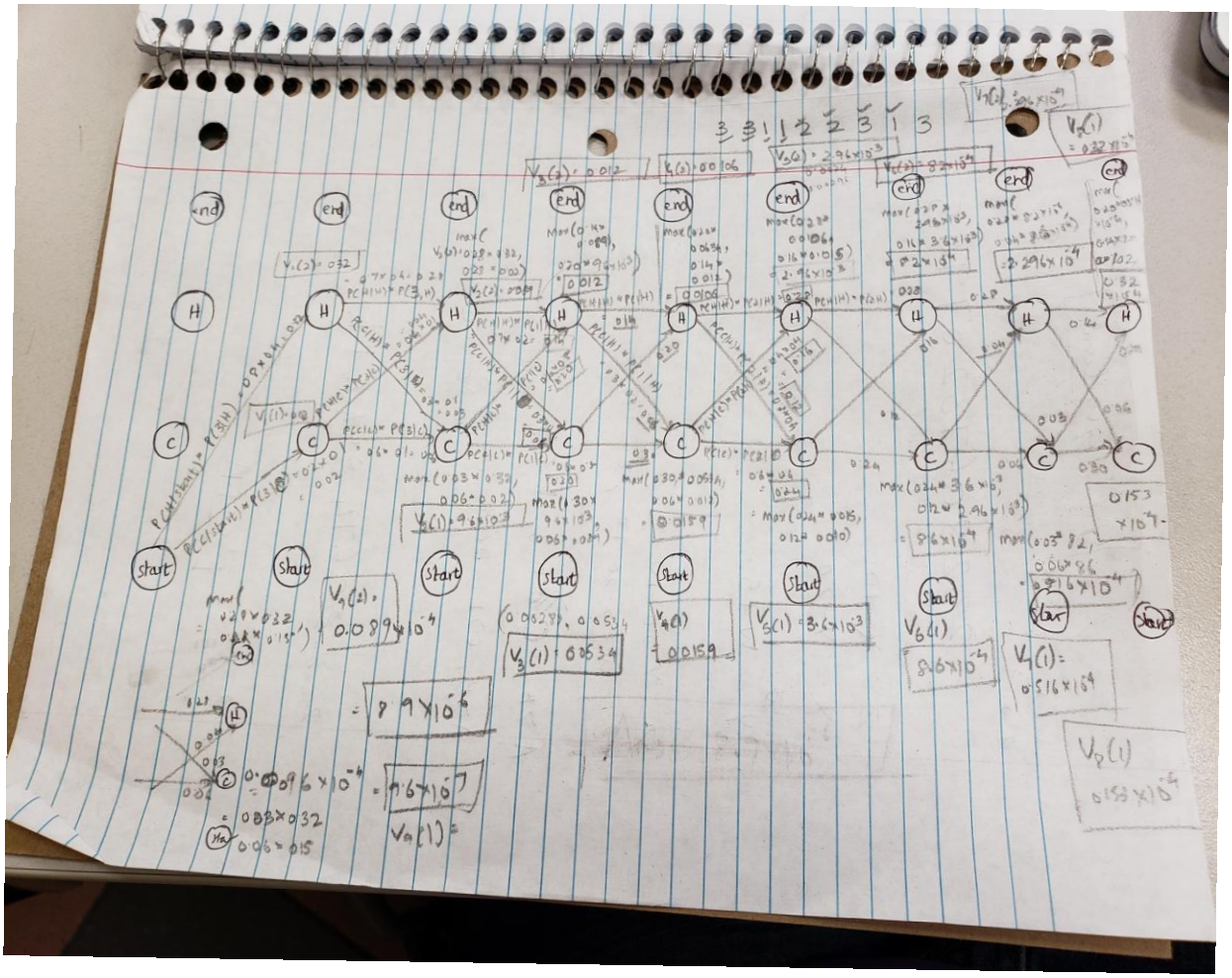
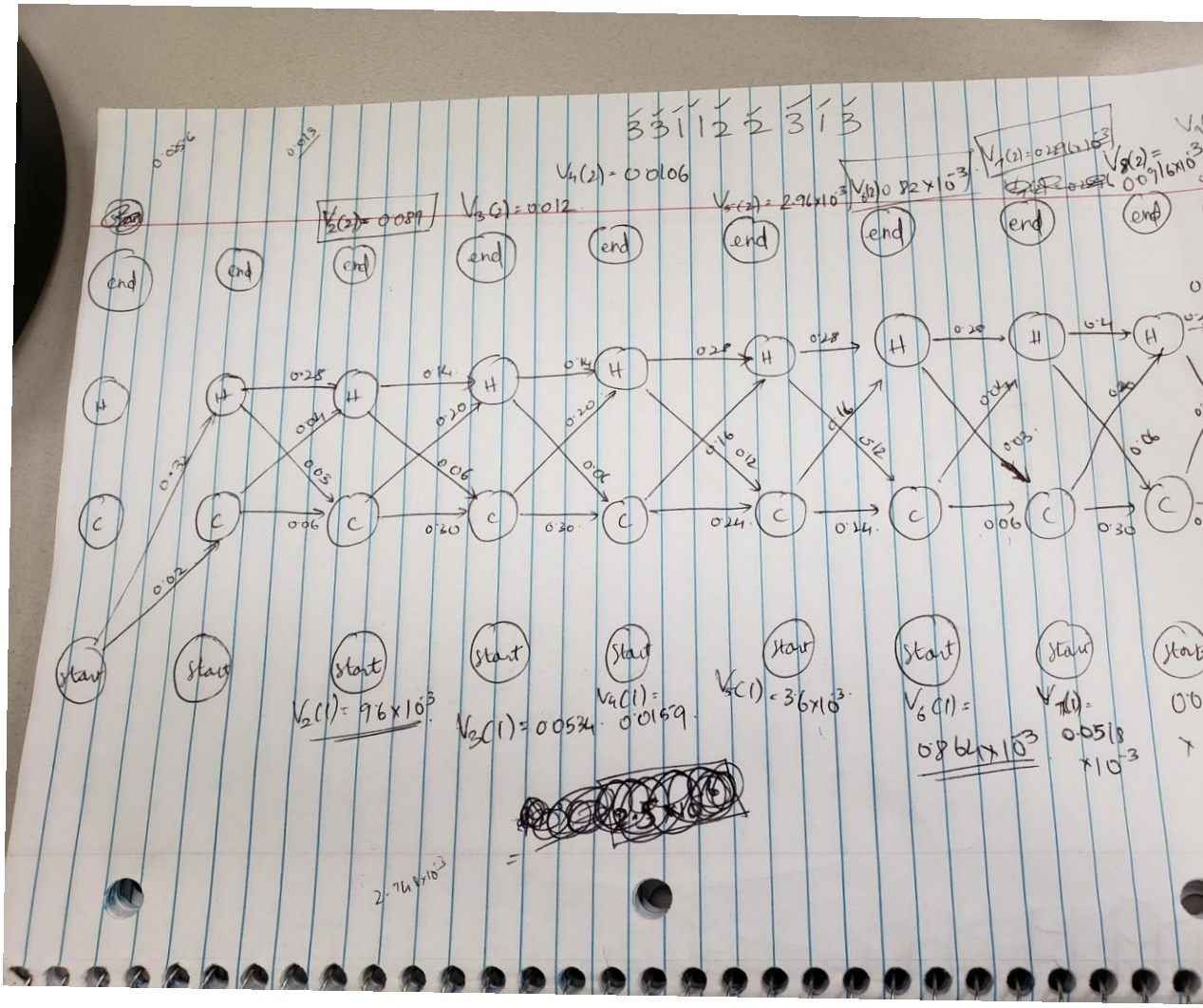
1a



Most likely probability : 1.9826343936e-06

1a



Most likely probability : 1.9826343936e-06

1b.

Observation sequence: 331

most likely probability : 0.013440000000000002

Observation sequence: 122313

most likely probability : 0.00013768294400000002

Observation sequence: 331123312

most likely probability : 1.9826343936 x 10^-6

2.

a. Secretariat/NNP is/VBZ expected/VBN to/TO race/?? tomorrow/NN

Values of functions for word race, check for class = VB

C = NN

F1 = 0

Weight = 0

C = VB

F2 = 1

Weight = 0.75

C = NN

F3 = 0

Weight = 0

C = VB

F4 = 1

Weight = 0.10

C = VB

F5 = 1

Weight = 0.15

C = NN

F6 = 0

Weight = 0

P(VB|x) = (e^0.75*e^0.10*e^0.15)/ (e^0.75*e^0.10*e^0.15 + e^0.3*e^-0.2)

= 0.71094950262

Checking for class = NN

C = NN

F1 = 1

Weight = 0.3

C = VB

F2 = 0

Weight = 0

C = NN

F3 = 0

Weight = 0.9

C = VB

F4 = 1

Weight = 0

C = VB

F5 = 0

Weight = 0

C = NN

F6 = 1

Weight = -0.2

P(NN|x) = (e^0.3*e^-0.2)/ (e^0.75*e^0.10*e^0.15 + e^0.3*e^-0.2)

= 0.28905049737

VB is the appropriate class for sentence in 2a

2b

Sentence: the/DT race/?? for/IN outer/JJ space/NN

Checking for class = VB

F1 = 0

Weight = 0

C = VB

F2 = 0

Weight = 0.75

C = NN

F3 = 0

Weight = 0

C = VB

F4 = 1

Weight = 0.10

C = VB

F5 = 1

Weight = 0.15

C = NN

F6 = 0

Weight = 0

P(VB|x) = (e^0.10.e^0.15)/ (e^0.10xe^0.15 + e^0.3xe^0.9)

= 0.27888482197

Checking for class = NN

C = NN

F1 = 1

Weight = 0.3

C = VB

F2 = 0

Weight = 0

C = NN

F3 = 1

Weight = 0.9

C = VB

F4 = 0

Weight = 0

C = VB

F5 = 0

Weight = 0

C = NN

F6 = 0

Weight = -0.2

P(NN|x) = (e^0.3xe^0.9)/ (e^0.10xe^0.15 + e^0.3xe^0.9)

0.72111517802

The class for the sentence in 2b is NN