Initial Distribution

State	
A_1 = true	0.99

Transition Probabilities:

	A_{t+1} = true	A_{t+1} = false
A_t = true	0.99	0.01
A_t = false	0.01	0.99

Emission Probabilities:

State	E	P(E|State)
A_t = true	1	0.2
A_t = true	0	0.8
A_t = false	1	0.9
A_t = false	0	0.1

1. Draw the HMM implied by the CPTs above.
2. What is the probability of observing the emission sequence $(E1 = 0, E2 = 1, E3 = 0)$?
3. Calculate $P(A4 = \text{true} \mid E1 = 0, E2 = 1, E3 = 0)$.