

# Classification of states in a Markov chain

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- Explain in your own words what we mean when we talk about the limiting behavior of a Markov chain.
- How is the return time to a state defined.
- What is the distinction between the transient and the recurrent states in a Markov chain.
- Draw an example of a Markov chain with one transient state and one recurrent state.



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- Draw transition graphs for two Markov chains with one transient and two recurrent states that have different limiting behaviors
- Draw an example of a Markov chain with 3 recurrent states and 4 transient states.