## Recap: MDPs

- Markov decision processes:
- States S
- Actions A
- Transitions P(s'|s,a) (or T(s,a,s'))
- Rewards R(s,a,s') (and discount  $\gamma$ )

s, a

s,a,s,

ullet Start state  $s_0$ 



Policy = map of states to actions

Quantities:

- Utility = sum of discounted rewards
- Values = expected future utility from a state (max node)
- Q-Values = expected future utility from a q-state (chance node)