**8.2)**

**States:**

* Monkeys position
* bananas position
* crates positions

**Initial State:**

* Any random state where the monkey is at some position
* the crates are at some position
* the bananas are at some position

**Actions:**

* Move monkey in any direction (forward, backward, left, right)
* Grab bananas
* Move crates (forward, backward, left, right)
* Stack crates
* Move up and down crate

**Transition Model:**

* The monkeys position changes based on what it decides to do
* The crates move due to the monkey maneuvering them
* The bananas are grabbed when the monkey is in the right location

**Goal State:**

* Monkey reaches bananas and grabs them

**Action Cost:**

* 1 per action

**8.4)**

**States:**

* 3 jugs, any of which could contain water

**Initial State:**

* All 3 jugs are empty

**Actions:**

* Pour jug into another jug until out of water or the other jug is full
* Empty jug onto the ground
* Fill a jug with the faucet

**Transition Model:**

* The amount of water in each jug based on the actions

**Goal State:**

* Get exactly 1 gallon of water into one of the jugs

**Action Cost:**

* 1 per action