

Homework 6

1. Initial State – (0,0)
Goal States – (2,0),(2,1),(2,2),(2,3)
Operators -
 1. Fill red bucket
 2. Fill green bucket
 3. Empty red bucket
 4. Empty green bucket
 5. Fill red bucket w/ green bucket
 6. Fill green bucket w/ red bucket

2. (Red,Green)

	0,0	4,0	0,3	1,3	4,3	3,0	1,0	3,3	0,1	4,2	4,1	0,2	2,3	2,0
0,0		x	x											
4,0	x			x	x									
0,3	x				x	x								
1,3		x	x		x		x							
4,3		x	x											
3,0	x	x	x					x						
1,0	x	x		x					x					
3,3			x		x	x				x				
0,1	x		x				x				x			
4,2		x			x			x				x		
4,1		x			x				x				x	
0,2	x		x							x				x
2,3			x		x						x			x
2,0	x	x										x	x	

14 States

50 Arcs

3. (0,0) → (0,4) → (1,3) → (1,0) → (0,1) → (4,1) → (2,3)
(0,0) → (0,3) → (3,0) → (3,3) → (4,2) → (0,2) → (2,0)
4. Given the process and constraints, it is impossible to get to (2,2) because it is outside of the proven state space.