

①. Solve 8 Puzzle using following 1P201P

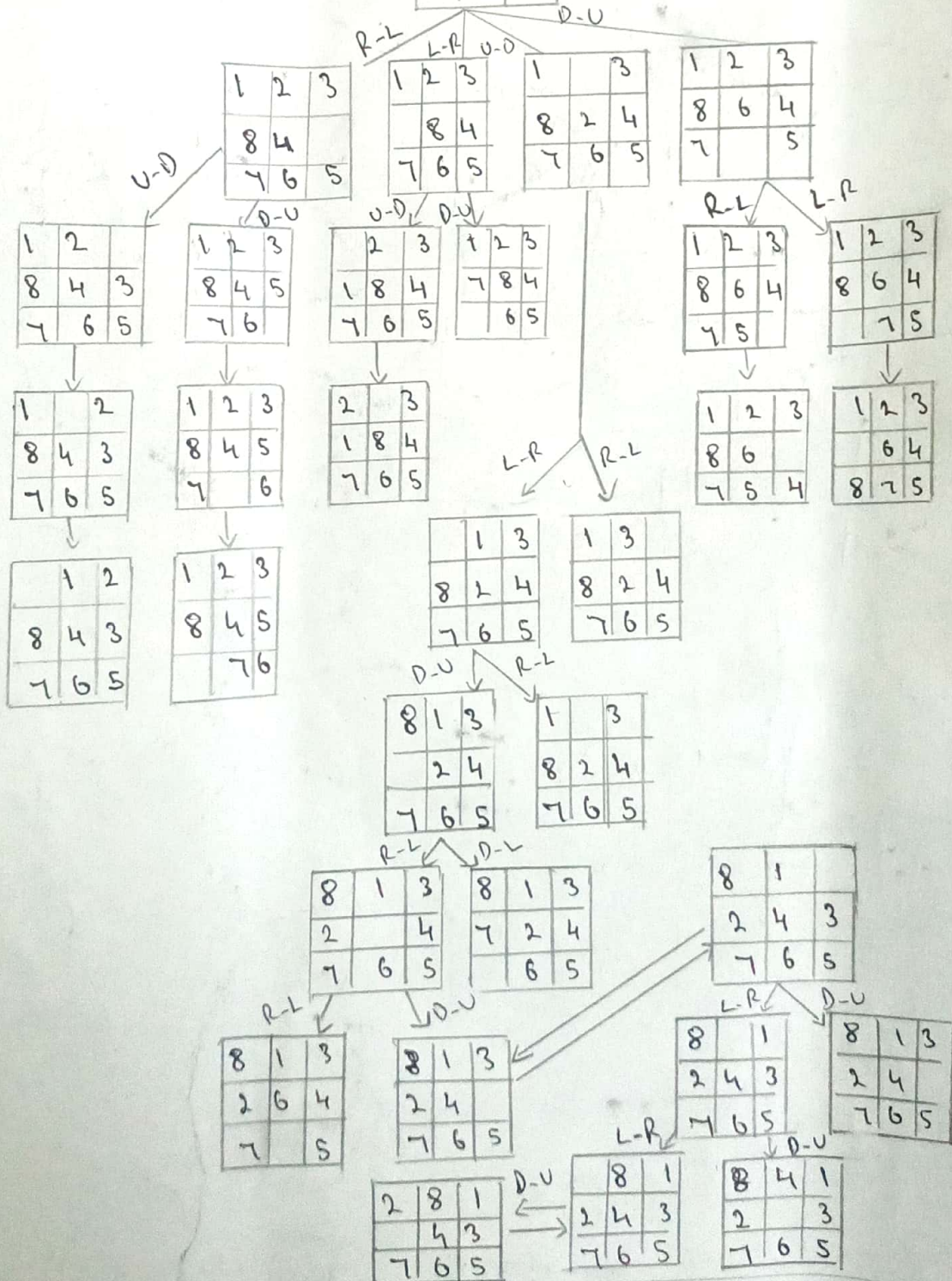
1	2	3
8		4
7	6	5

Initial  
State

2	8	1
	4	3
7	6	5

Goal  
State

1	2	3
8		4
7	6	5





② Solve the 8-Queen Problem using the following i/p & o/p.

\* In 8 queen Problem we use simple technique to get solution.

\* There are total 92 solutions.

\* The Placing of queen is not allowed to affect the another queen by rows, column & diagonal.

\* we check the every rows, column and diagonal of a queen while placing.

\* Here the two solution, of 8-queen puzzle

\* These are the solutions which is got

output from Python Program.

7				Q			
6		Q					
5			Q				
4					Q		
3			Q				
2						Q	
1					Q		
0	Q						
0	1	2	3	4	5	6	7

Ans. (0,0) (6,1) (3,2) (5,3)  
(7,4) (4,6) (2,7) (1,5)

		Q					
			Q				
	Q						
						Q	
				Q			
		Q					
					Q		
Q							
0	1	2	3	4	5	6	7

Ans. (0,0) (1,6) (2,3) (3,5) (4,7)  
(5,7) (6,4) (7,2)

- ③ Solve the water Jug Problem using the following i/p & o/p Diagram:



You have three jugs. They can hold 12 liters, 8 liters and 5 liters, respectively. Your 12 liter jug is full of water. How can you split up with water to give away exactly 6 liters, and keep 6 liters P.

Solution:

The goal  $\Rightarrow (12, 0, 0)$

The output  $\Rightarrow (6, 6, 0)$

The solution is

①  $\Rightarrow$   $\Rightarrow$  Pour from 12 into 8L.

②  $\Rightarrow$   $\Rightarrow$  Pour from 8 into 5L

③  $\Rightarrow$   $\Rightarrow$  Pour 5 into 12L.

④  $\Rightarrow$   $\Rightarrow$  Pour 8 into 5L

⑤  $\Rightarrow$   $\Rightarrow$  Pour from 12 into 8L

⑥  $\Rightarrow$   $\Rightarrow$  Pour from 8 into 5L

⑦  $\Rightarrow$   $\Rightarrow$  Pour from 5 into 12L  
 $\therefore$  The final answer is  $(6, 6, 0)$



Q

If KANSAS + OHIO = OREGON then find the value of G + R + O + S + S

1-7

2-8

3-9

4-10

Sol.

$$\text{KANSAS} + \text{OHIO} = \text{OREGON}$$

The value of O = 5

$$\text{OHIO} = 5865$$

$$\text{OREGON} = 503157$$

$$\text{GROSS} = 4 + R + O + S + S = 1 + 0 + 5 + 2 + 2 =$$

5. Solve the Missionaries cannibals Problem using following i/p & o/p

Start state

3M
3C

0M
0C

← state 1

0M
1C

← state 2

0M
2C

← state 3

1M
0C

← state 4

1M
1C

← state 5

1 M	← State 6
2 C	

2 M	← State 7
0 C	

2 M	← State 8
1 C	

2 M	← State 9
0 C	

⑥ Solve the Vacuum cleaner Problem using following IP & O/P

Step 1

Vacuum cleaner Dirt	Dirt
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Step 2

Dirt	Vacuum cleaner Dirt
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Step 3

Vacuum cleaner	Dirt
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Step 4

Dirt	Vacuum cleaner
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Step 5

Vacuum cleaner Dirt	
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Step 6

	Vacuum cleaner Dirt
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Step 7

Vacuum cleaner	
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Step 8

	Vacuum cleaner
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