

1. solve the 8 puzzle Problem using  
following input and output

Initial state

1	2	3
8		4
7	6	5

↓ move up

Goal state:

2	8	1
4	3	
7	6	5

1	2	3
8	2	4
7	6	5

↓ move right

1	2	3
8	2	4
7	6	5

↓ move up

1	2	3
8	2	4
7	6	5

↓ move left

1	2	3
8	2	4
7	6	5

↓ move down

1	2	3
8	2	4
7	6	5

↓ move right

1	2	3
8	2	4
7	6	5

↓ move right

1	2	3
8	2	4
7	6	5

↓ move up

1	2	3
8	2	4
7	6	7

2. solve the 8 queen problem using  
following input and output

	1	2	3	4	5	6	7	8	.	.	.
1	Q										
2									Q		
3					Q						
4										Q	
5											Q
6											
7											Q
8											

1		Q									
2									Q		
3										Q	
4	Q										
5			Q								
6									Q		
7										Q	
8											

The eight queens problem is the problem of placing eight queens on an 8x8 chessboard such that none of them attack one another. more generally, the n-queens problem places n queens on an n x n chessboard.

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

Step 1: keep the queen at (1, 3)

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

Q<sub>2</sub>

Step 2: keep queen 2 at (2, 6)

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5								
6								
7								
8								

Q<sub>2</sub>

Q<sub>3</sub>

Step 3: keep Queen 3 at (3, 8)

Step 4

1  
2  
3  
4  
5  
6  
7  
8

Step 5:

1  
2  
3  
4  
5  
6  
7  
8

Step 6:

1  
2  
3  
4  
5  
6  
7  
8

1 2 3 4 5 6 7 8

1 Q1

2 Q2

3 Q3

4 Q4

5

6

7

8

Keep Queen 4 at (4,1)

step: 1 2 3 4 5 6 7 8

1 Q1

2 Q2

3 Q3

4 Q4

5 Q5

6

7

8

Keep Queen 5 at (5,4)

step: 1 2 3 4 5 6 7 8

1 Q1

2 Q2

3 Q3

4 Q4

5 Q5

6 Q6

7

8

Keep Queen 6 at (6,7)

1 2 3 4 5 6 7 8

1 Q1

2

3

4 Q4

5

6

7

8

Q2

Q3

keep Queen 7 at (7, 1)

3. SOLV

flow

1 2 3 4 5 6 7 8

1 Q1

2

3

4 Q4

5

6

7

8 Q8

Q2

Q3

keep Queen at (8, 1)

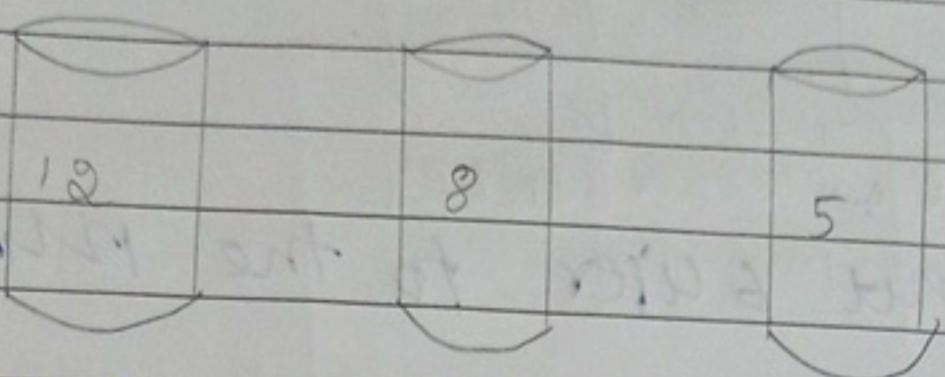
S1

St

3. solve the water jug problem using the following input

classmate

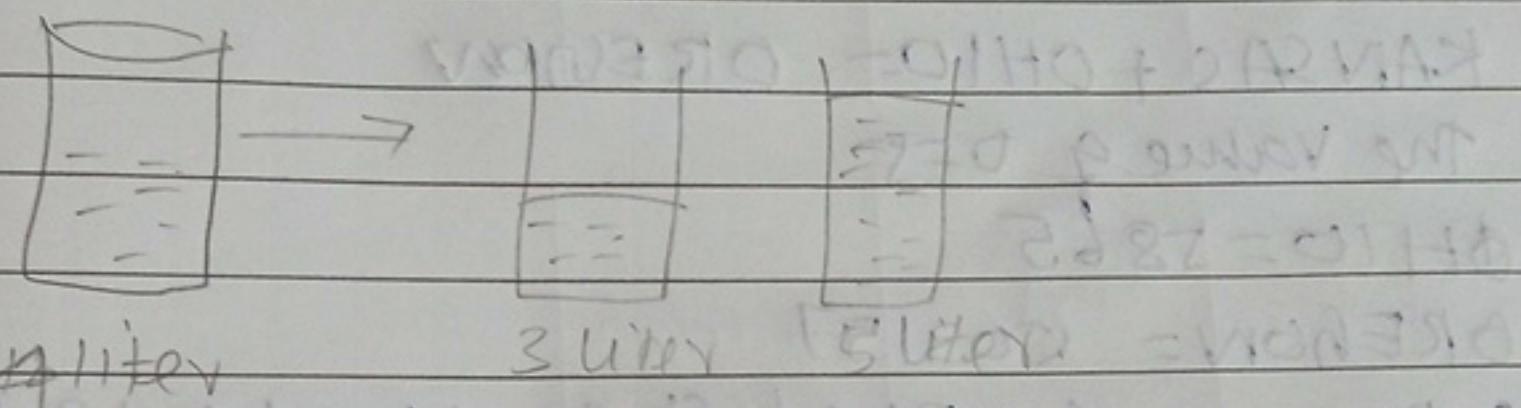
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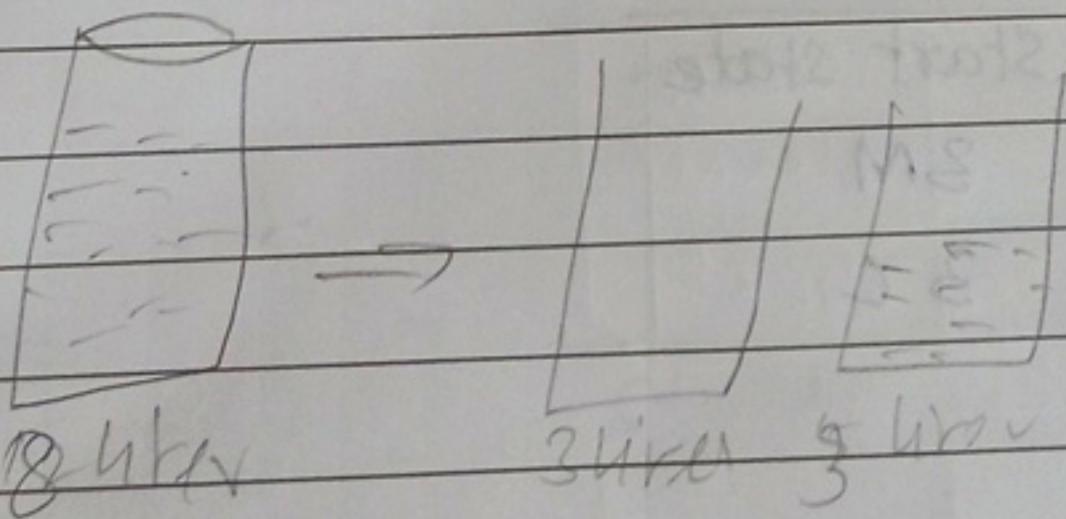
Split the water to give 6 liters to give 6 liters

Step 1:

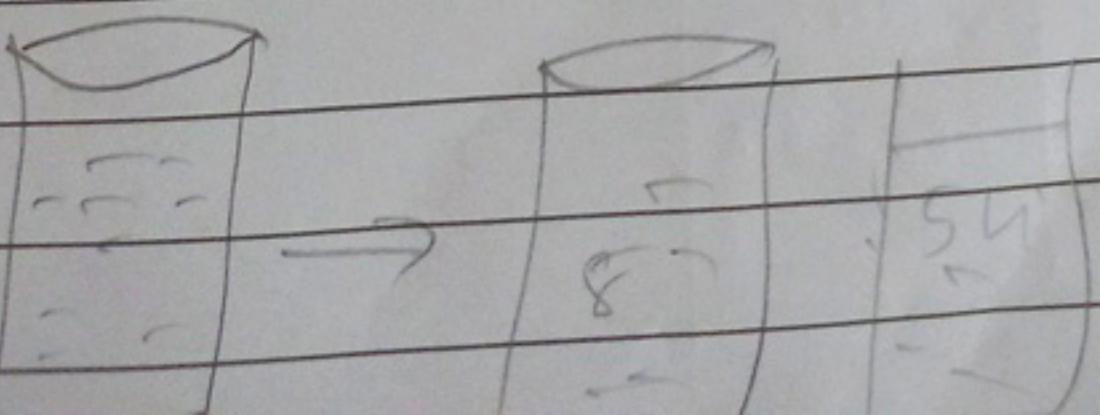
Fill 8 jug with water from 12 jug and pour it into 5 liter

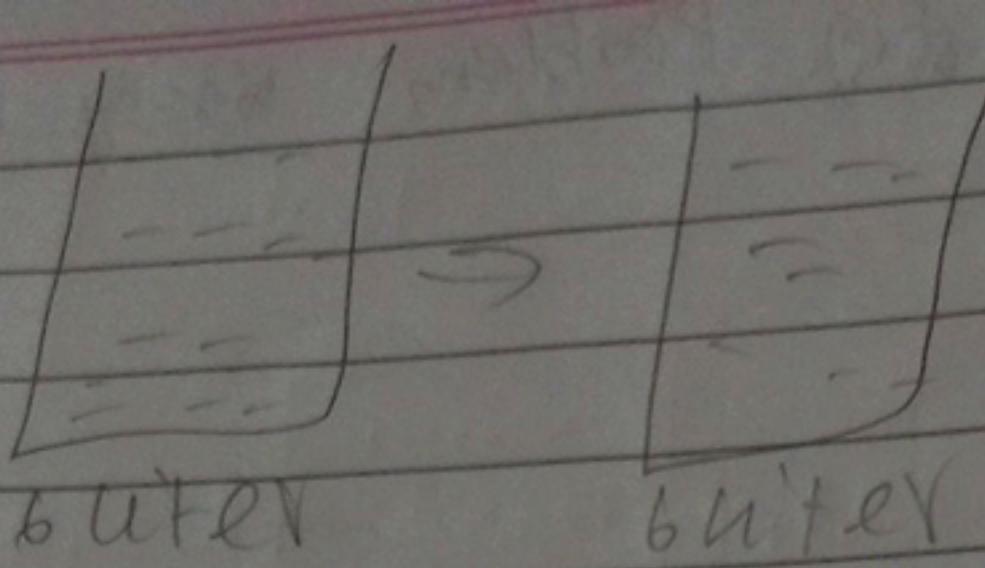


Step 2: Empty 5 liter jug back to monitor  
fill 3 liter from 8 liter if



Step 3 pour it to 5 liter jug since 5 liter has already contain 3 liter.





Now put butter to the marking.

4. If KANSAS + OHIO = OREGON. Then  
find the value of G + R + O + S + S

- 1. 7
- 2. 8
- 3. 9
- 4. 16

KANSAS + OHIO = OREGON

The value of O = 5

OHIO = 5865

OREGON = 503157

GROSS = G + R + O + S + S = 1 + 0 + 5 + 2 + 12 = 20

5. Solve the Missionaries cannibal problem using following input and output

Start state

3 M

3 C

OM  
OC

state 1

OM  
LC

stated

OM  
2C

State 3

IM  
OC

State 4

IM  
LC

State 5

IM  
2C

State 6

2M  
OC

State 7

2M  
LC

State 8

2M  
2f.

State 9

6. Sowe  
and output

step 1	Vacuum cleaner	Dirt
		Dirt

step 2	Dirt	Vacuum cleaner
		Dirt

step 3	Vacuum cleaner	Dirt
		Dirt

step 4	Dirt	Vacuum cleaner
		Dirt

step 5	Vacuum cleaner	
		Dirt

step 6		Vacuum cleaner
		Dirt

Step 7	Vacuum cleaner	

Step 8	Vacuum cleaner	