Quiz 7: Arc Consistency

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2/2 points (ungraded)

Part 1

Consider a run of AC-3 for a CSP with for variables: A, B, C and D. Assume that the queue has the following arcs on it:

1. $A \rightarrow B$
2. $A \rightarrow C$
3. $B \rightarrow A$
4. $B \rightarrow D$
5. $C \rightarrow D$
6. $D \rightarrow C$

After enforcing consistency of the arc $A \rightarrow B$, we end up pruning some values. As a consequence of this pruning, which arcs will get added to the queue?

- [ ] $A \rightarrow D$
- [ ] $B \rightarrow D$
- [x] $C \rightarrow A$
- [ ] $C \rightarrow D$
- [x] $D \rightarrow A$

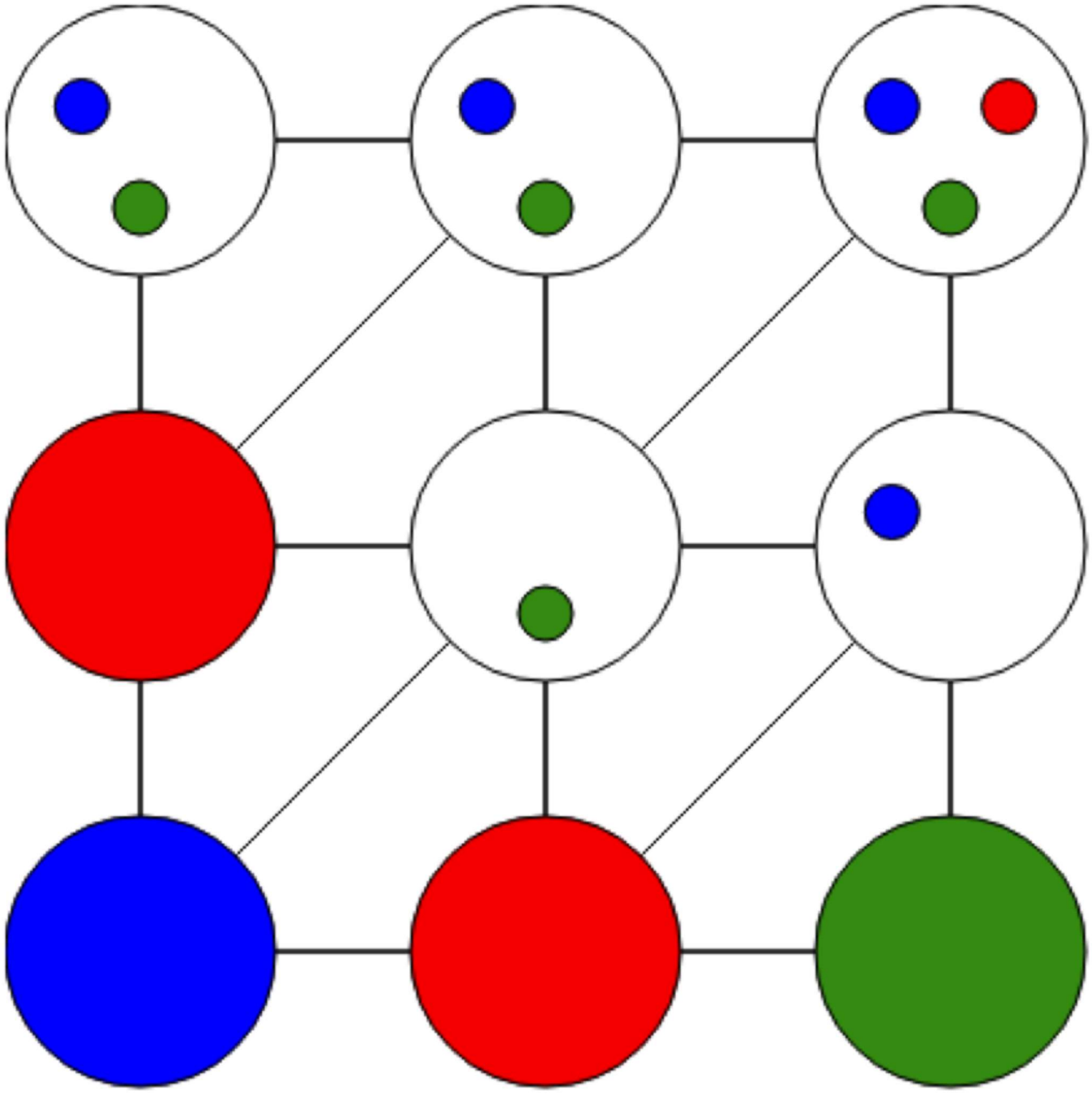
- [ ] $D \rightarrow B$

- [ ] No arcs get added

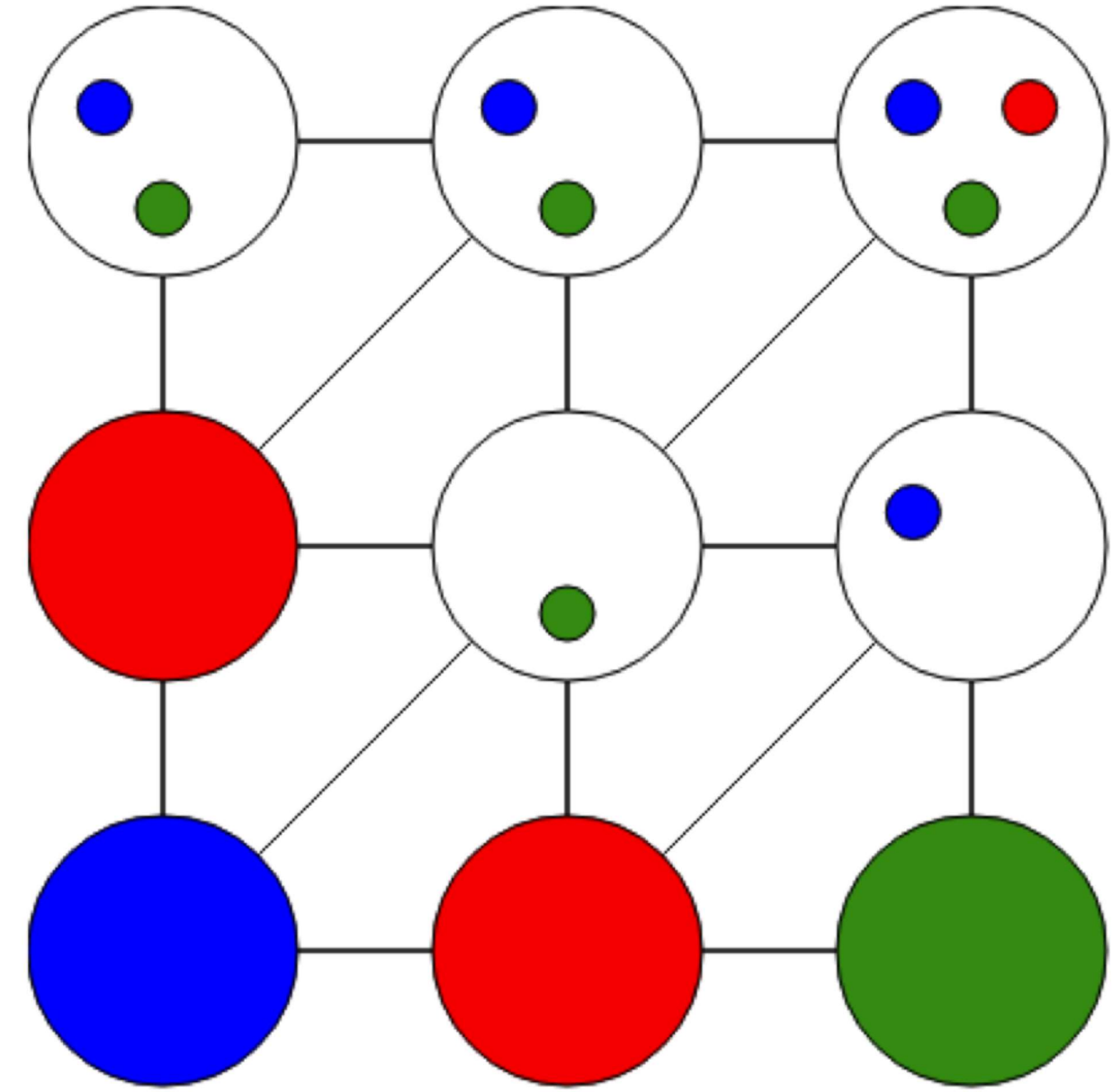
✔

Part 2

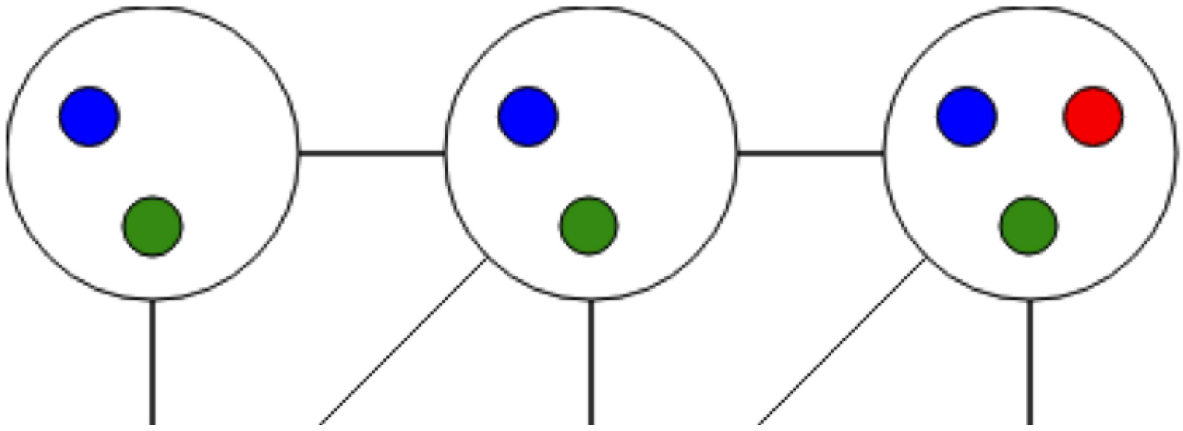
We'll start with the partial assignment and domains shown in the figure below.

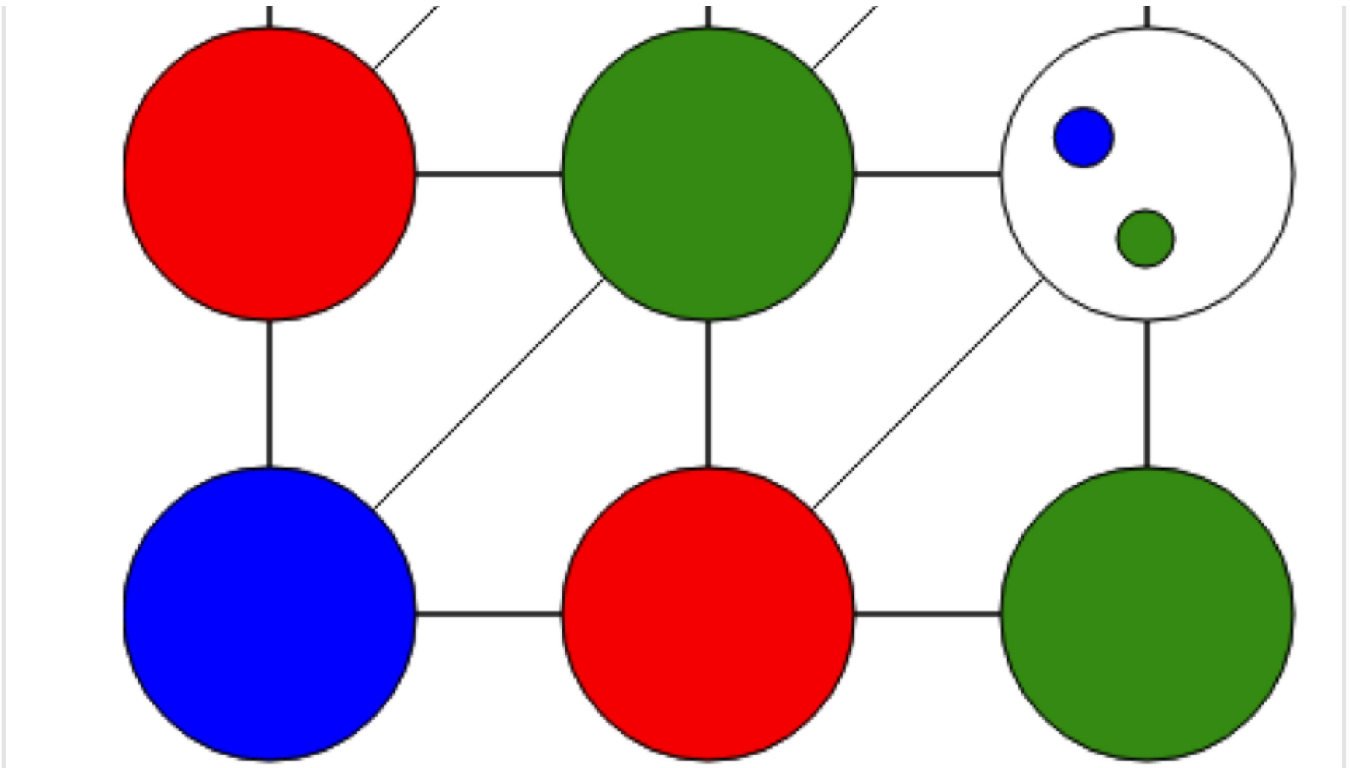


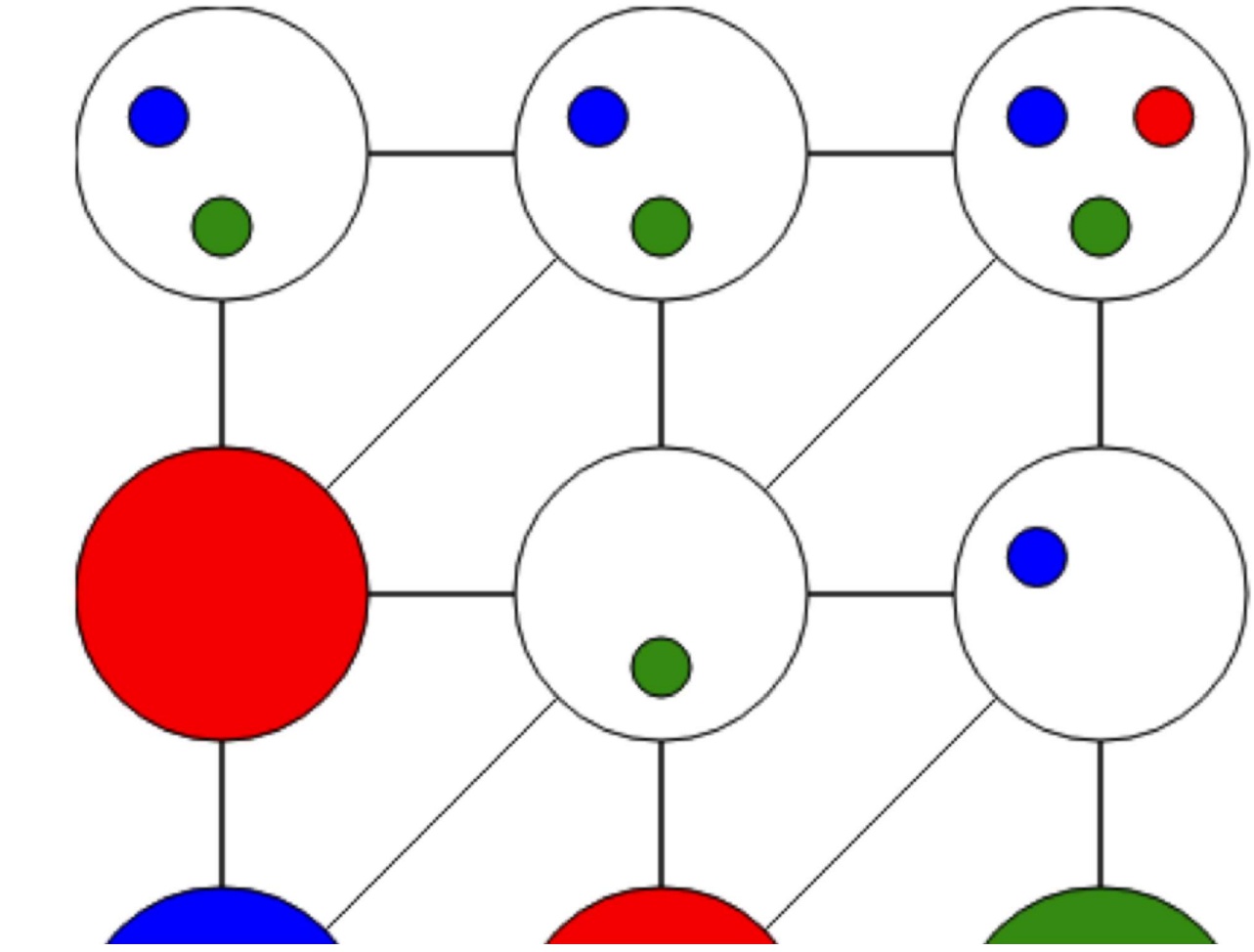
After assigning the next variable (the node in the center of the figure) and then enforcing arc consistency, what is the resulting partial assignment?

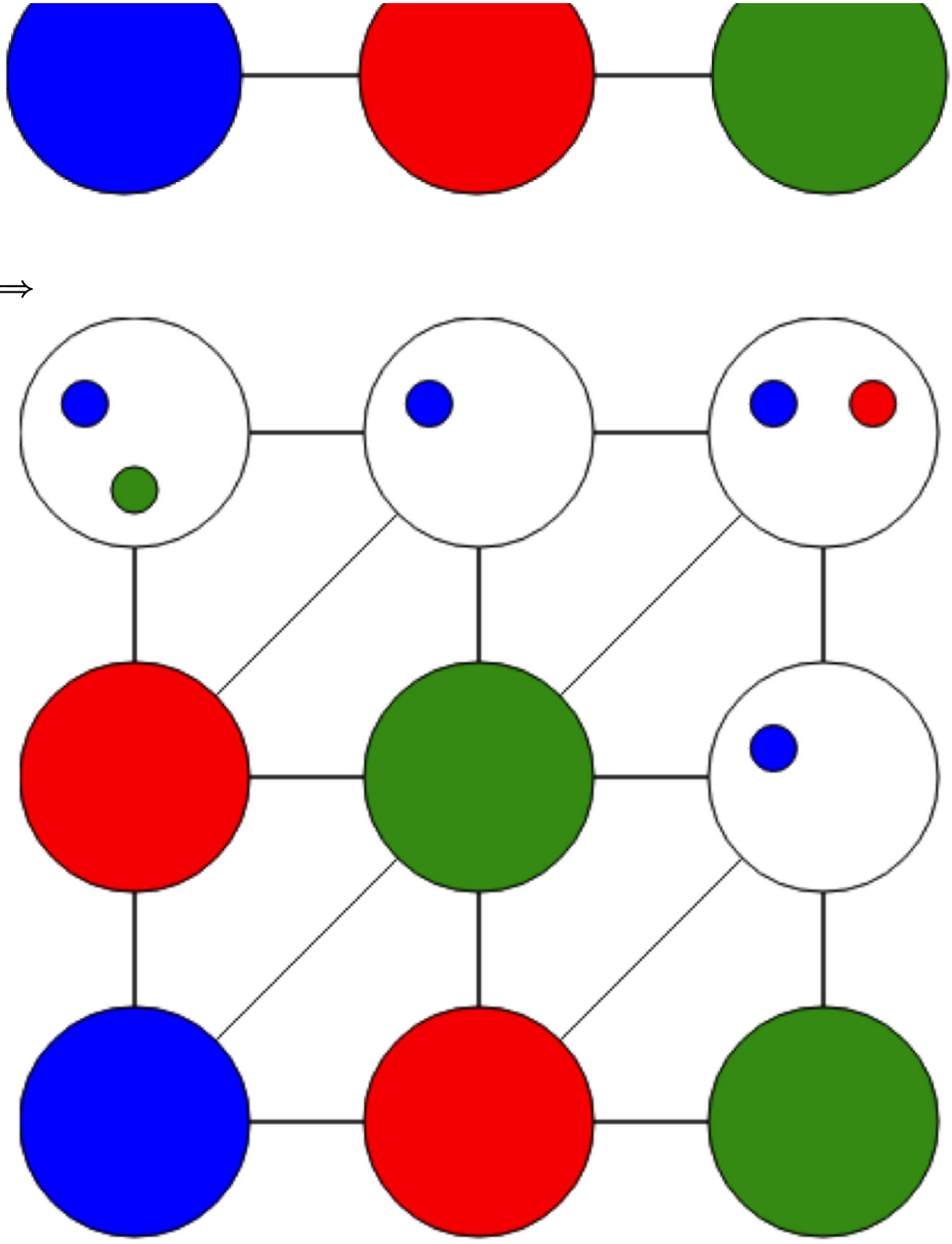


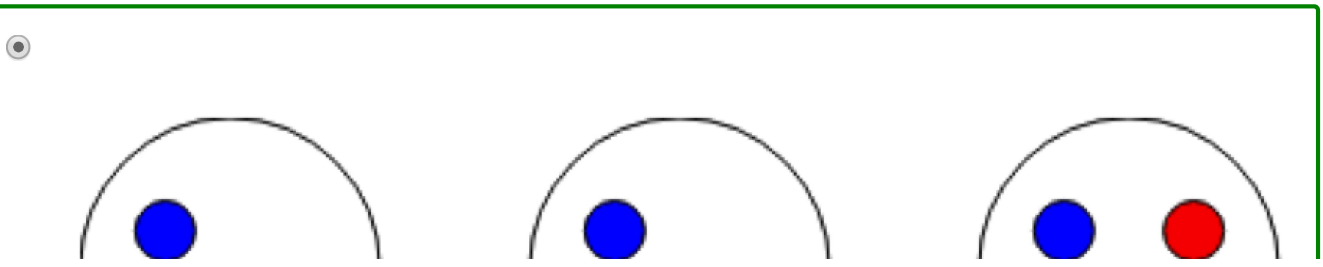
$\Longrightarrow$

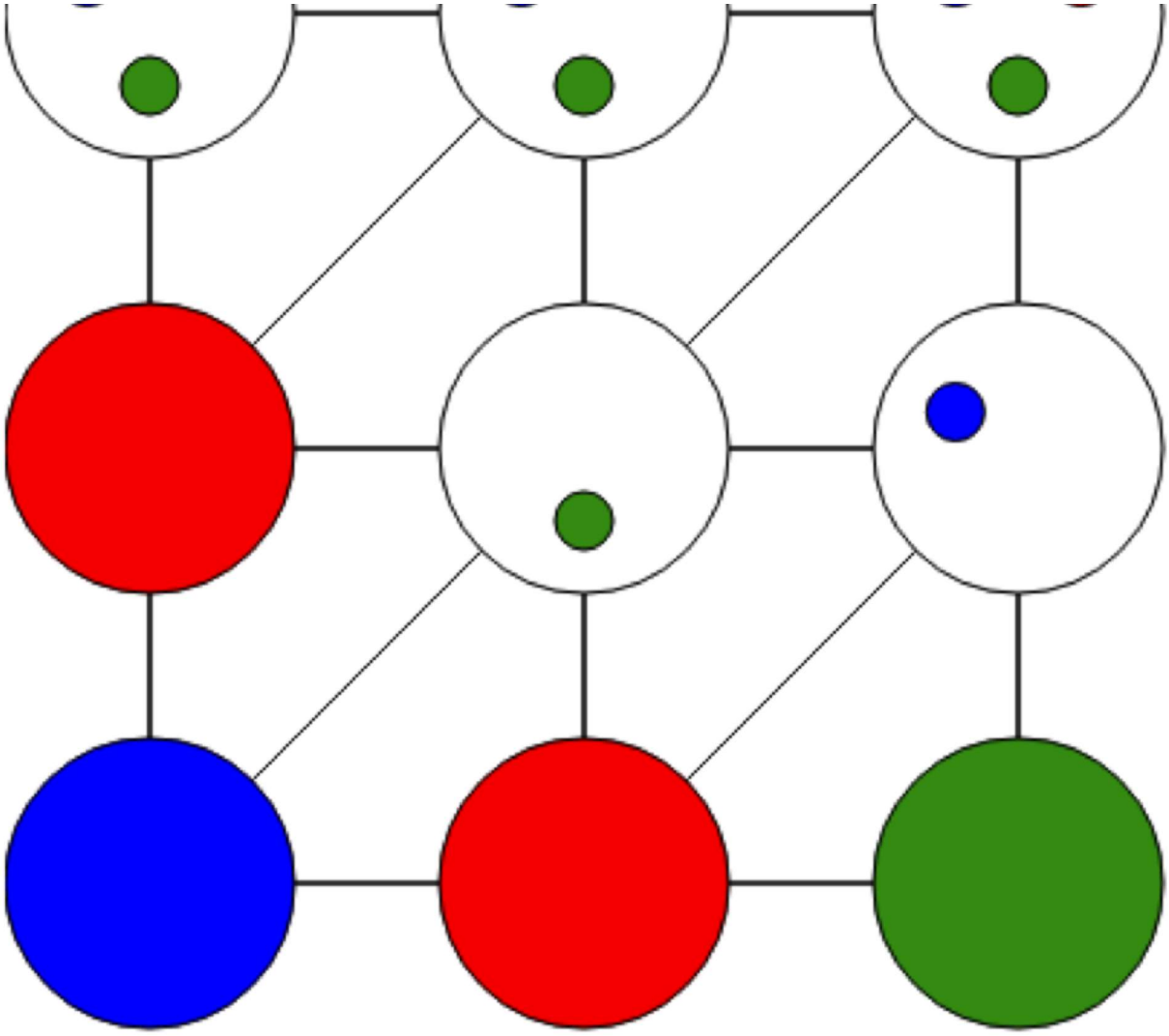












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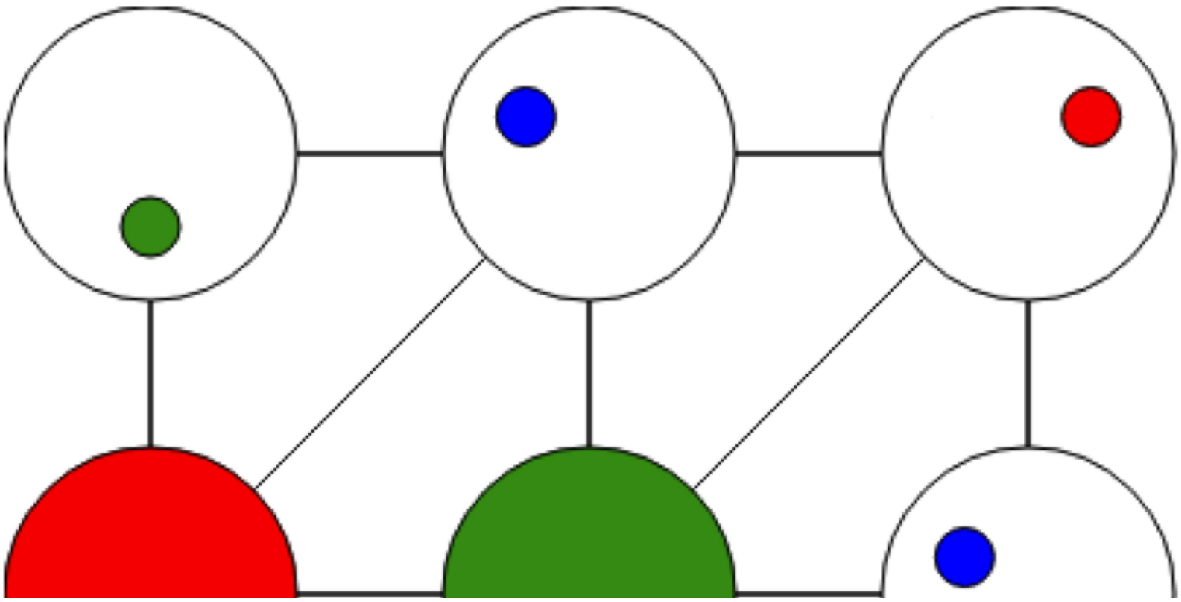

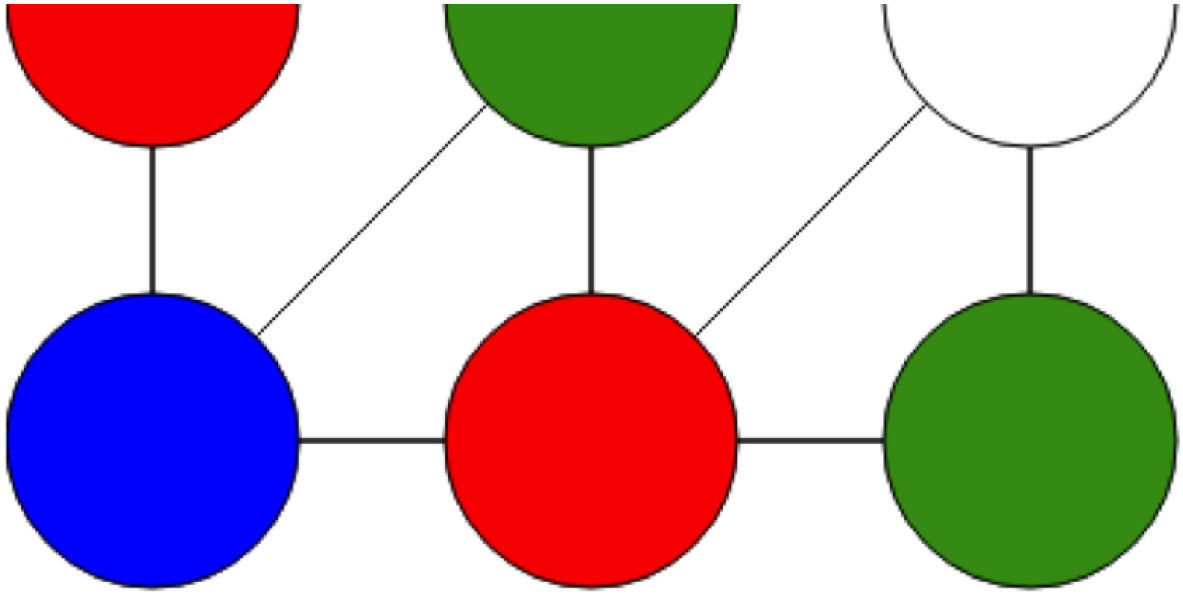

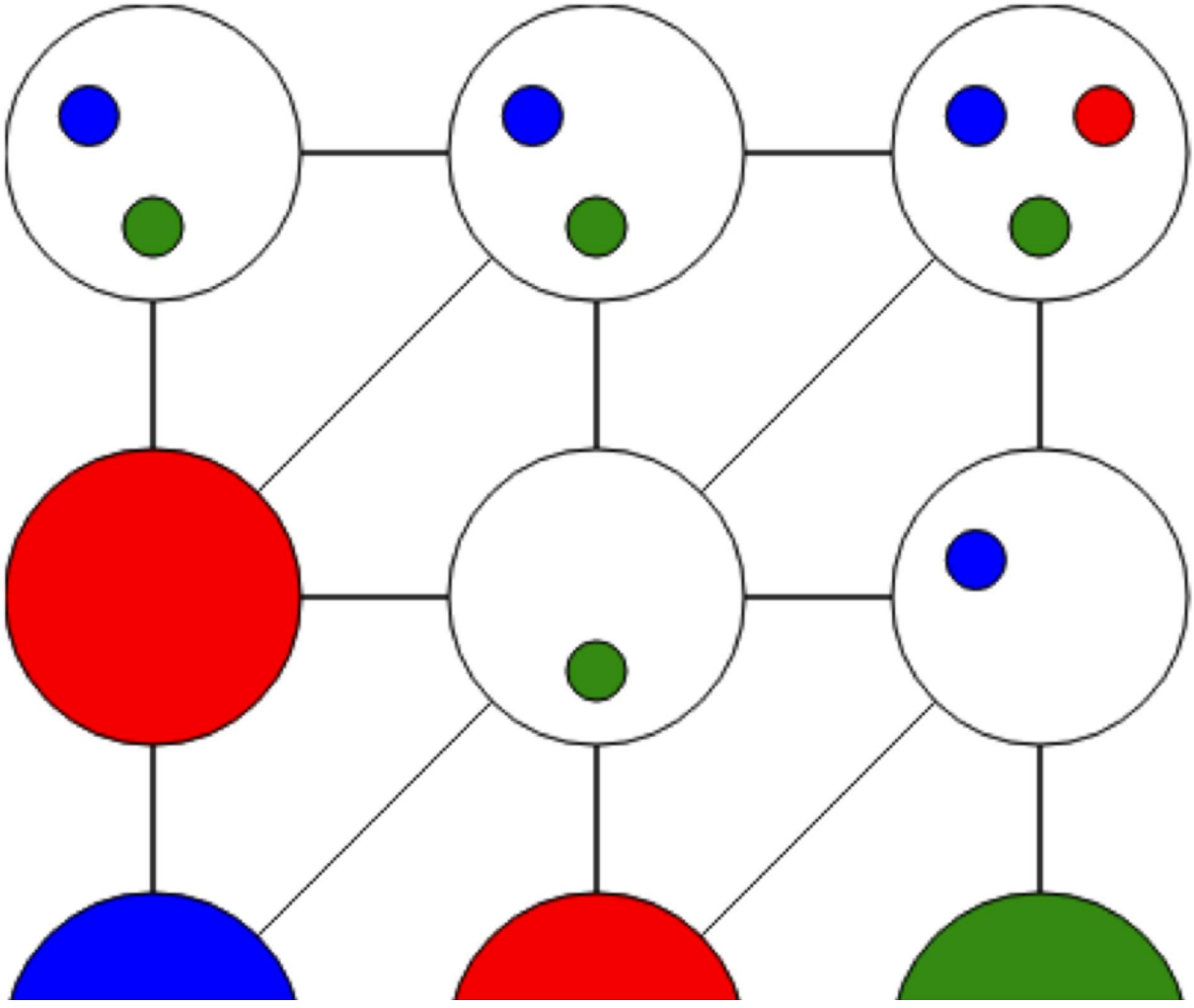

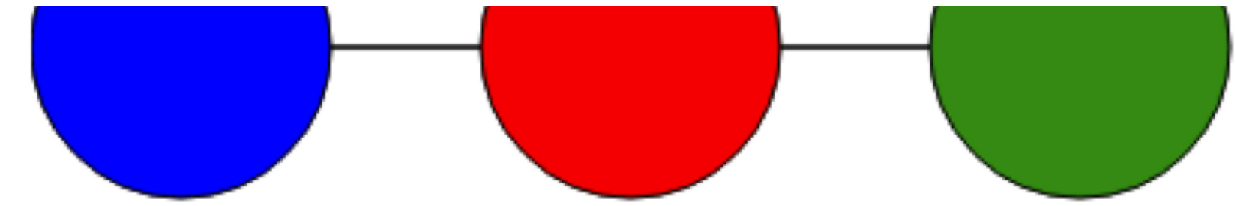

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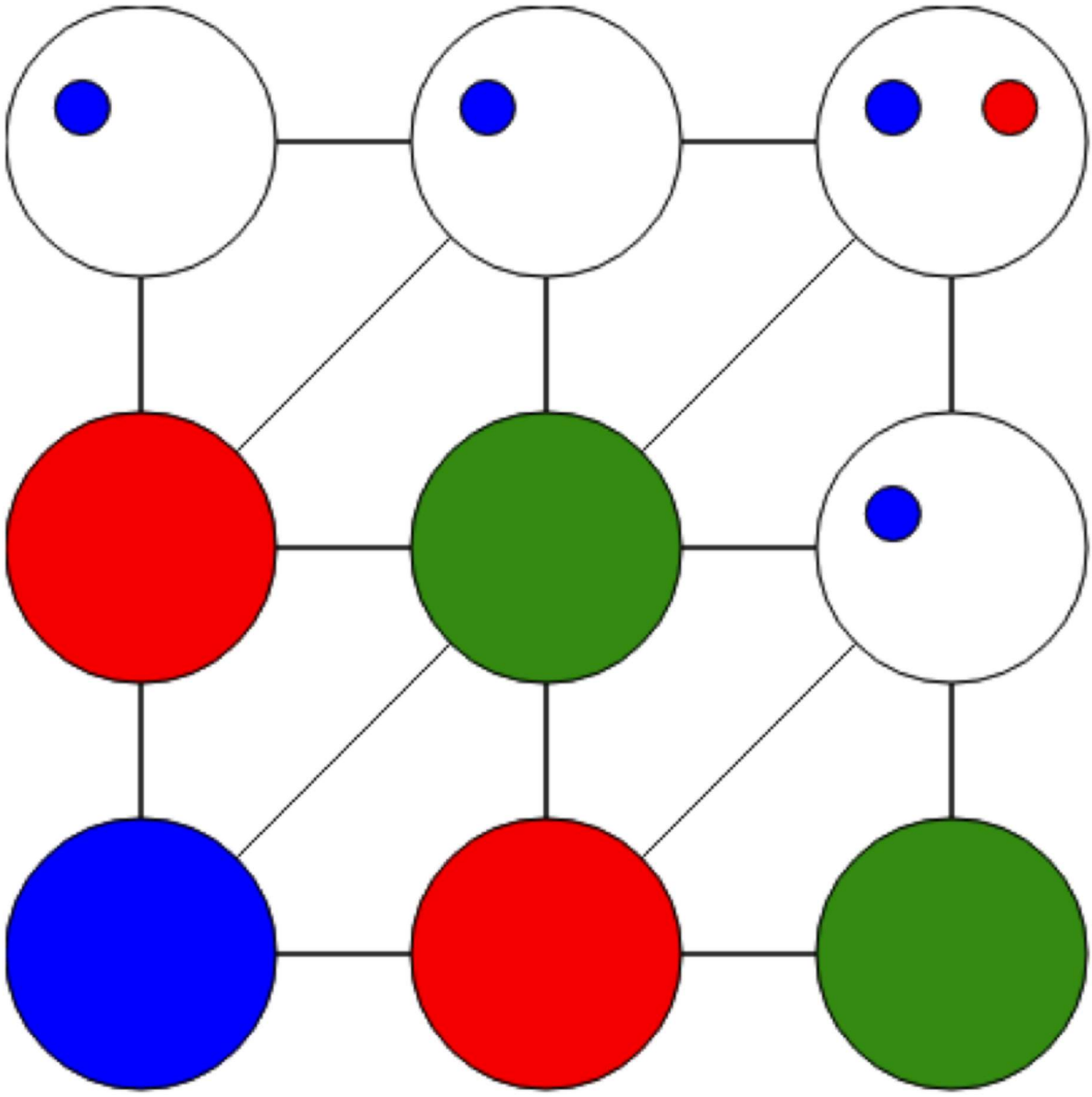

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✔ Correct (2/2 points)