Question 1.
Consider the following CSP with 3 variables X, Y and Z:

- \( \text{Dom}(X) = \{1, \ldots, 10\} \)
- \( \text{Dom}(Y) = \{5, \ldots, 15\} \)
- \( \text{Dom}(Z) = \{5, \ldots, 20\} \)

And binary constraints:

- \( C(X, Y) : X > Y \)
- \( C(Y, Z) : Y + Z = 12 \)
- \( C(X, Z) : X + Z = 16 \)

a). Draw the constraint graph

b). Are the constraints arc consistent? If no, apply arc consistence method repeatedly so they become arc consistent. What is the updated domain of each variable?

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Question 2. Map Coloring
Color the following map using red, green and blue such that adjacent regions have different colors.
Question 3. The Crystal Maze Puzzle
You are given 8 discs, numbered 1 to 8. Place discs on the nodes of the graph such that adjacent nodes are not numbered consecutively.