Week 3 Quiz

Q1.

If you are to model Sudoku game as a CSP problem, which of the following is the best representation of domains and variables:

A. Each 3 x 3 subgrids is a variable and the domain of each variable is the set of numbers from 1 to 9.

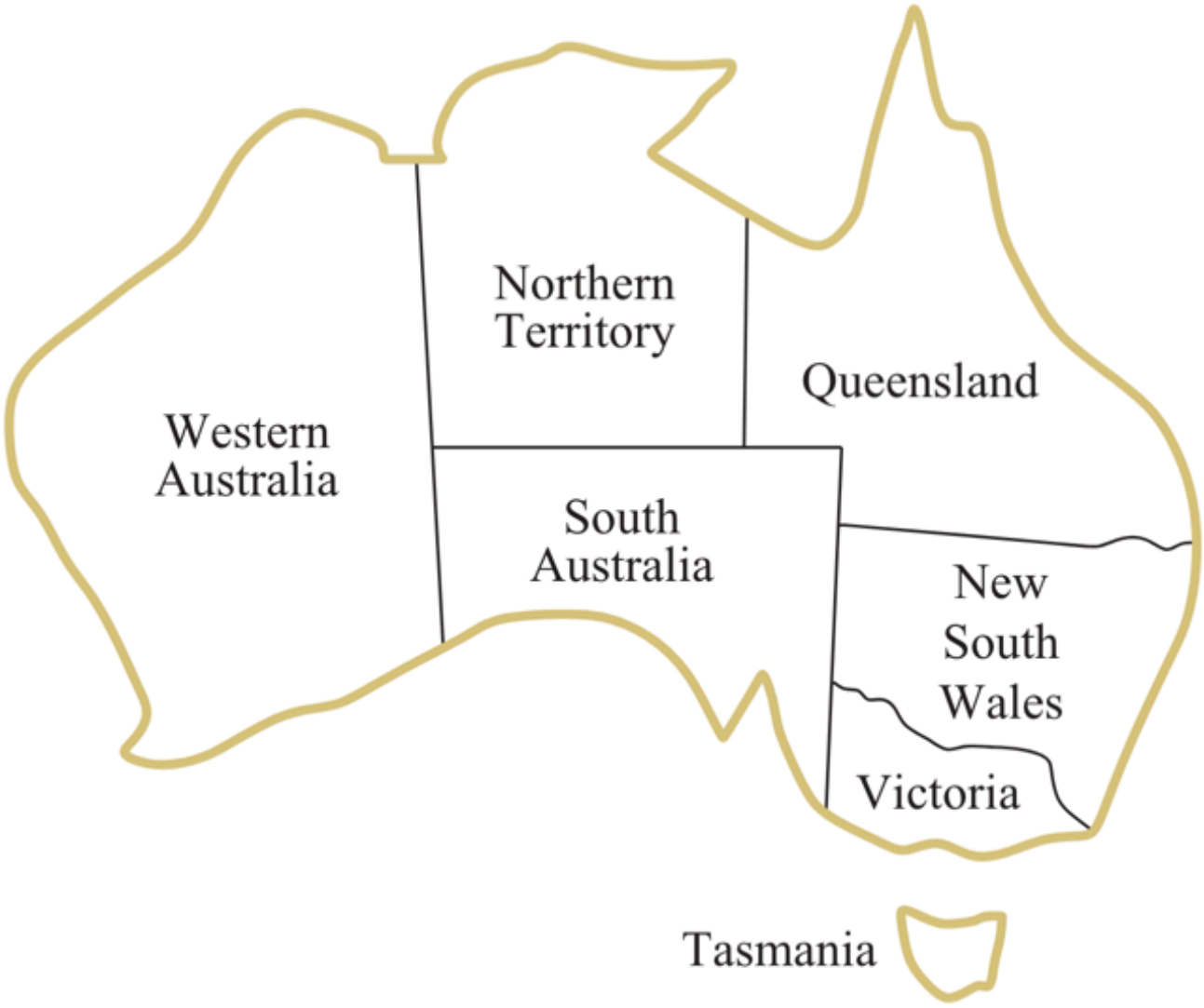
(x) Each cell on the Sudoku board is a variable and the domain of each variable is the set of numbers from 1 to 9.

A. Each cell on the Sudoku board is a variable and the domain is the sum of the numbers in each subsquare

B. All cells on the Sudoku board represent the domain and the numbers from 1 to 9 are the variables

Q2.

Which of the following is/are a valid constraint(s) in the map coloring problem:



A. WA NT (WA and NT must not have the same color)

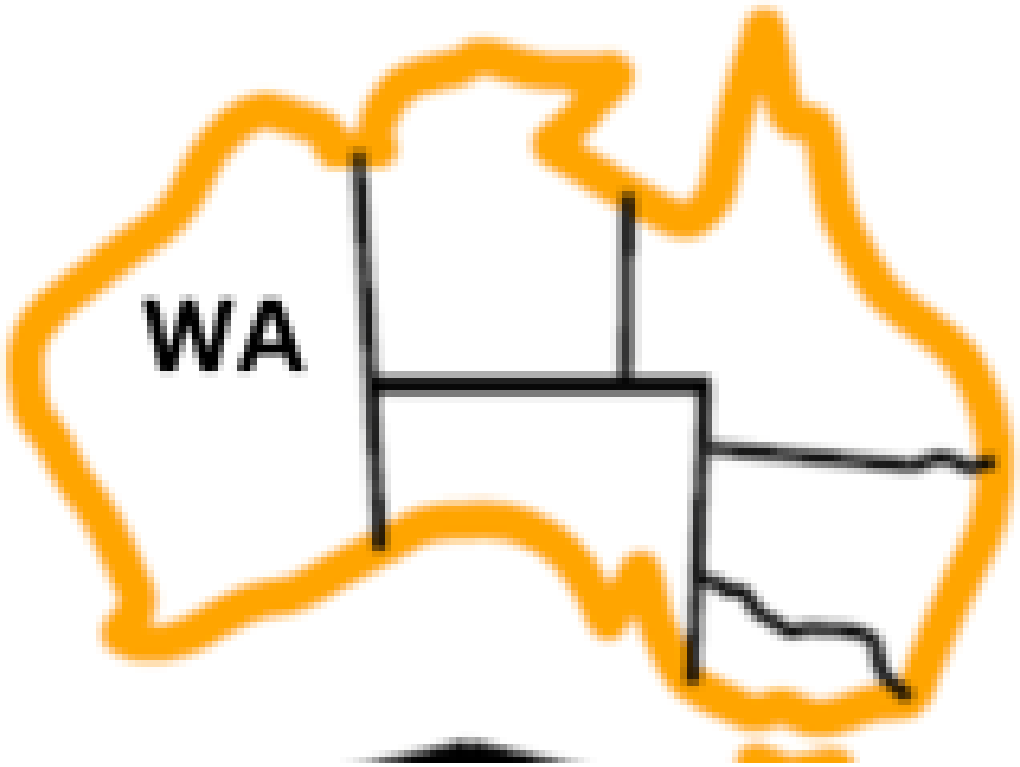
B. WA QU (WA and QU must not have the same color)

C. SA TA (SA and TA must not have the same color)

D. All of the above

Q3.

While solving the map coloring problem using backtracking search, if the first step we selected the following variable:



The next steps should be:

A. Color the WA with red, green, or blue, then select the next cell and do the same

B. Explore the possible values for WA one at a time, and for each value, explore all possible values for the next variable submission.

C. Explore the possible values for WA one at a time, and for each value, explore only possible values for the next variable that satisfy the constraints.

D. None of the above

Q4.

What does this code snippet do:

```
add {var = value} to assignment

for each unassigned var in ORDER-DOMAIN-VALUES(var, assignment, csp) do
   if value is not consistent with assignment given then
        remove value from DOMAIN[var]
```

A. A- Checks constraints of the variables before assigning them

B. B- Removes all not-needed values from the domain

C. A and B

D. Implements forward checking

Q5.

[true or false] An arc X -> Y is consistent if every value in the domain of X has a value in the domain of Y that does not violate the constraint between X and Y.

A. True

B. False

Q6.

[true or false] Once arc consistency is enforced as a pre-processing step, forward checking can be used during backtracking search to maintain arc consistency for all variables.

A. True

B. False