

1.

Variables in the upper middle box:

A4, A5, A6

B4, B5, B6

C4, C5, C6

Their domains:

$A4 = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$A5 = \{2\}$

$A6 = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$B4 = \{3\}$

$B5 = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$B6 = \{5\}$

$C4 = \{8\}$

$C5 = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

$C6 = \{6\}$

2.

Reduced domain for the upper middle box:

$A4 = \{4, 9\}$

$A6 = \{1, 4, 7\}$

$B5 = \{4, 7\}$

$C5 = \{7, 9\}$

3.

Using MRV we explore the the variable with the fewest legal values in its domain, so in this case either A4, B5 or C5 would be fine.

4.

When using LCV we want to choose a value that rules out the fewest values in the remaining variables, in this case 9.