Name:	Date:	Period:

Lab16: Map of the United States, FC+MRV

- Attach a code printout.
- Forward checking (FC), don't wait until a color has been assigned to every state to check for a solution; rather, as assignments are made immediately remove those colors from every neighboring state's possibility list. Then, if every state gets a color it must be a solution and if any state runs out of colors you can give up early (backtrack).
- Minimum remaining values (MRV), at each step we assign a color to whichever state has the fewest possible colors available to it; on the first step every state has four possible colors so we need a tie-breaker: choose the state with the most neighbors.
- If there were only three colors instead of four then which state would be the first to run out of colors? (Just use your four-color code but with only three colors and report the first failure.)

• Again with only three colors, how many states can be assigned a color if those that run out of colors are simply ignored? (Don't check for early failure and ignore zero remaining colors when searching for the state with the fewest remaining colors.)

Official Use Only

Header: Name Correct Date Program Description Variable Names Style: Comments Modular Data Structures: Obvious General Lean Algorithm: Clear Correct Efficient Scoring: Total Raw Late