

## Distance-One Graph Coloring Rules

Color every vertex (circle) such that vertices (circles) that are connected by an edge (line) have different colors.

What is the minimum (smallest) number of colors you need?

## Coloring Maps with Minimum Colors

Color every state such that states that next to one another have different colors. Can you color the lower 48 states using just four colors?

## Distance-Two Graph Coloring Rules

*Expert Level Coloring:* Color every vertex (circle) such that vertices (circles) that are connected by an edge (line) have different colors, and vertices that are connected to the same neighbor have different colors (i.e. all vertices within a distance-two path must have a different color).

What is the minimum (smallest) number of colors you need?

Example of minimal distance-two coloring

