

3-colorability: proving YES

The proof that $G = (V, E)$ has a 3-coloring is simple:

- ▶ show the assignment of colors to the vertices
- ▶ verify no two adjacent vertices have the same color

Note:

- ▶ The time to prove YES is polynomial *once* the coloring is found
- ▶ This is not relevant to the case where the graph cannot be 3-colored.