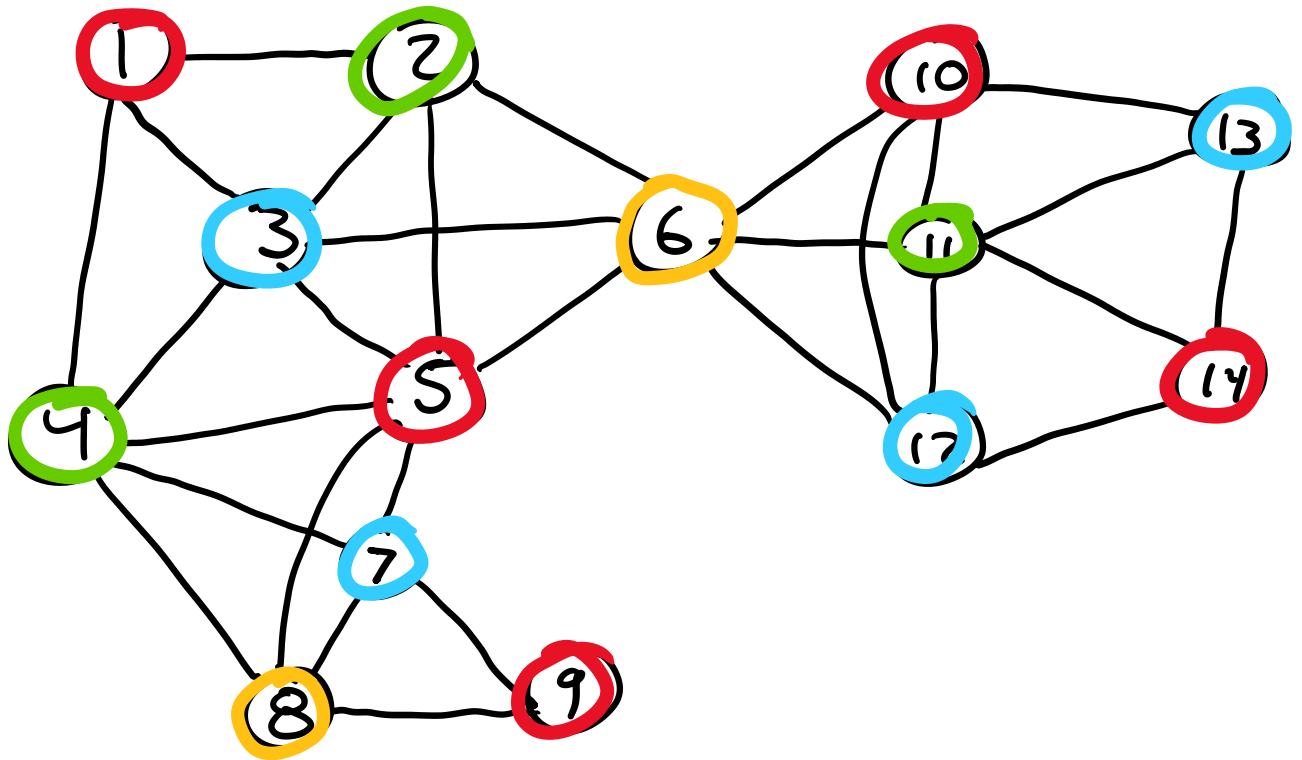


1)



2)

colors: ○ < ○ < ○ < ○

Optimal == yes

$$\chi'(G) = 4 = \Delta(G)$$

$$\chi'(G) = \Delta(G) \text{ or } \Delta(G) + 1$$

from class