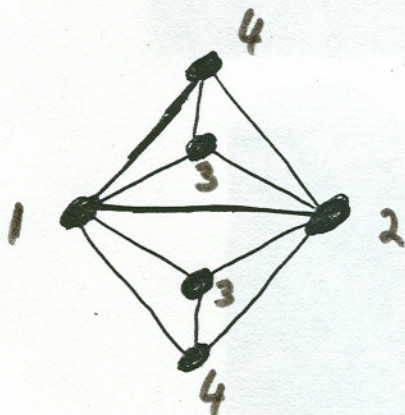


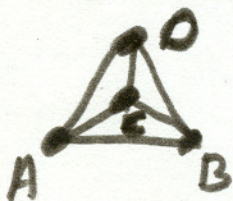
⑩ What is the chromatic number $\chi(G)$ of the following graph? Give a coloring using $\chi(G)$ colors. Explain why it is impossible to color using less than $\chi(G)$ colors.



$\chi(G) = 4$

I have colored it using 4 colors. Furthermore, the piece

K_4 :



always needs 4 colors. A has to

be colored - color it color 1. B is a neighbor of A, so it needs a new color: color 2. C is a neighbor of both A and B, so it needs a new color: color 3. D is a neighbor of A and B and C so it needs a new color: color 4.