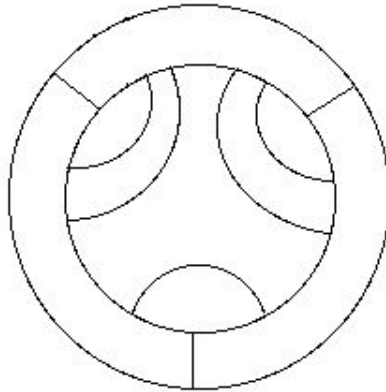


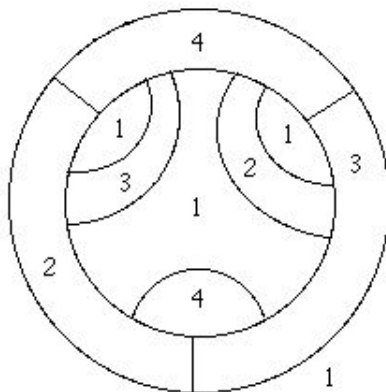
p.700, icon at Example 1

#1. Find the minimum number of colors needed to color the regions, including the infinite region, of the following map, so no adjacent regions have the same color.



Solution:

Four colors suffice, as shown in the following figure:



Note that three colors cannot be enough because the “center” region and the three regions that make up the outer ring are all adjacent to each other.
