## Problem 6: Coloring Pentagon

You have 7 colors available to color the vertices of a pentagon. In how many different ways, up to a rotation, can you color the vertices so that no two adjacent vertices get the same color.

As always, show your work, fully explain and justify your answer.

Posting Date 11/4/16. Submit solutions to Noah Aydin, Mathematics Department, RBH 319 (e-mail or hard-copy, but hard copy submissions must include a time stamp) by 4 pm on $11 / 18 / 16$.

