

MATH 421 Q1 WINTER 2017 HOMEWORK 6

Due Mar. 9, 12pm.

Total 20 points

QUESTION 1. (10 PTS) *How many ways are there to color the corners of a regular pentagon with the colors red, blue, and green if*

- a) (5 PTS) *Only rotation is allowed.*
- b) (5 PTS) *Both rotation and flipping are allowed.*

Give the numerical value of your answer.

QUESTION 2. (5 PTS) *How many ways are there to color the four vertices of a square with five colors such that no color is used on more than three vertices? Both rotation and flipping are allowed.*

QUESTION 3. (5 PTS) *How many ways are there to color the four vertices of a non-square rhombus with m colors? Both rotation and flipping are allowed.*