

## MATH 421 Q1 WINTER 2017 HOMEWORK 7

Due Mar. 23, 12pm.

Total 20 points

QUESTION 1. (10 PTS) *Use Polya's theory to calculate the number of ways coloring the six faces of a rectangular solid that is 12 inches wide, 12 inches high, and 18 inches long, with three colors. (You do not need to justify your group  $G$ ) Give your answer in numerical value.*

QUESTION 2. (10 PTS) *Use Polya's theory to calculate the number of ways to label the vertices of a cube with either a 0 or a 1? Give your answer in numerical value.*