Math 2326 - Introduction to Abstract Mathematics
Assignment 17 - Due Friday, February 29

Problem 61: Suppose that $a, b, c \in \mathbb{Z}$ with $\gcd(a, b) = 1$. Show that if a divides bc then a divides c.

Problem 62: Make a multiplication table for $\mathcal{D}_3$, the 6 symmetries of the triangle.

Problem 63: (You may, and are encouraged to, use the multiplication table given in class to do parts a and b.)

a. Find the inverses of each element in $\mathcal{D}_4$.

b. Compute $R_{90}^2 D_1^3 H V R_{270}$.

c. Without proof, compute the number of symmetries of the regular pentagon. Do the same for the regular hexagon. In general, how many symmetries of the regular n-gon exist for $n \geq 3$?