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 $D_3$, 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 $D_4$.

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

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 $n \geq 3$?