

## Set 5 - Homework

---

**Name:**

---

(1) How many elements does  $D_4$  have? Justify your answer.

(2) Compute  $\sigma^{-2}\tau$  and  $\sigma^{-1}\tau\sigma$ , where  $\sigma$  and  $\tau$  are as in the worksheet.

- (3) For each of the four colored figures, how many shapes are in the  $D_n$ -orbit? How many elements are in the stabilizer? Any conjectures?