SYMMETRIC GROUPS – PRACTICE

1. Find the number of elements in S_5, S_6, and S_7 .

2. Find the number of elements in A_5, A_6, and A_7

3. Find $\dfrac{|S_5|}{|A_5|}, \dfrac{|S_6|}{|A_6|}$, and $\dfrac{|S_7|}{|A_7|}$.

4. Below is a list of the 24 elements in S_4. Find the 12 elements in A_4 .

   $S_4 = \{$ (), (3,4), (2,3), (2,3,4), (2,4,3), (2,4), (1,2), (1,2)(3,4), (1,2,3), (1,2,3,4), (1,2,4,3), (1,2,4), (1,3,2), (1,3,4,2), (1,3), (1,3,4), (1,3)(2,4), (1,3,2,4), (1,4,3,2), (1,4,2), (1,4,3), (1,4), (1,4,2,3), (1,4)(2,3) $\}$

5. First find the 8 elements in D_4, and then find $Even(D_4)$.