

Q6: Consider a regular n -gon. Given any vertex p , there are n choices where we can move p while preserving the shape. Since the movement must be rigid, the 2 adjacent vertices to p , q, r must be adjacent after the movement. Hence there are two ways to move p , when counting off the vertices counter clockwise we either get the sequence q, p, r or r, p, q . Since motions must be rigid the movement of p determines the motion of the entire shape. Thus by counting the total number of ways we can move a vertex, there are $2n$ total symmetries of any regular n -gon.