Mathematics students are urged to recognize patterns and form general conclusions. However, students of elementary mathematics are cautioned against assuming that conjectures formed inductively are necessarily true in the general case. A classic example of a reasonable conjecture that is false arises in the solution of the following problem: What is the maximum number of regions formed by pairwise connections of $n$ points on the circle? We will employ elementary counting methods to solve this problem and more general problems. (Received September 20, 2016)