

(Lecture 2) Curiouser and curiouser

In 1938 Philip Hall published the following result, which he described as "rather curious". Fix a prime  $p$ , and let  $A(p)$  be the class of all finite abelian  $p$ -groups. Then

$$\sum_{G \in A(p)} 1/|G| = \sum_{G \in A(p)} 1/|\text{Aut}(G)|.$$

We'll present related formulas involving families of non-abelian  $p$ -groups.