

Section 35: Series of Groups

Def: A *subnormal series* of a group G is a finite sequence H_0, H_1, \dots, H_n of subgroups of G such that $H_i < H_{i+1}$ and H_i is a normal subgroup of H_{i+1} with $H_0 = \{e\}$ and $H_n = G$. A *normal series* of G is a finite sequence H_0, H_1, \dots, H_n of normal subgroups of G such that $H_i < H_{i+1}$, $H_0 = \{e\}$, and $H_n = G$.

Note: The difference between a subnormal series and a normal series is that in a subnormal series the groups just have to be normal subgroups of the next group in the series, while in the normal series, every subgroup has to be normal under the original group.

Note: A normal series is always subnormal, but a subnormal series is not always normal.