

Day 19: Introduction to Cosets

1. Whiteboard pages 1 and 2.
2. **Work on Day 19 Class Work. Leave 20 minutes for discussions.**
3. Whiteboard pages 3 through 8.
 - **Page 7:** Look at Problem #5 in the class work for data.
 - **Page 8:** See Proof of the Day video for a partial proof of the multiplicative theorem.
 - **Page 8:** Not a proof, because we can't manipulate (co)sets like elements without justification.

Proof of the Day: Shown in video only.

Theorem. Let G be a group, H a subgroup, and $a, b \in G$. If $b^{-1} \cdot a \in H$, then $aH \subseteq bH$.