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Reading Assignment 14
March 11, 2013

Activities 25.2 and 25.3 are related by the fact that we are trying to find out what makes a set of all cosets of a coset form a group structure. In Activity 25.2 we see that the right and left cosets of H are equal and because of this the operation $(aH)(bH) = (ab)H$ is well defined. The right and left cosets of K are not equal and because of this the operation $(aK)(bK) = (ab)K$ is not well defined. Depending on which member of the set we choose from the sets of aK and bK we can arrive at different results for $(ab)K$ and so it is not a well defined operation.

In Activity 25.3 we prove our conjecture that if the left and right cosets of a subgroup are equal, then the set of all cosets forms a group structure. The operation in this group structure being $(aH)(bH) = (ab)H$.