M621 HW 4, due Tuesday Sept. 27.

1. Important, interesting: page 45, number 19. If you have questions, ask (email, in class, office hours..). It's not hard, once you get a little into it, and the entire exercise can be written up in a few lines. Everyone is required to try it, but +1 EC for getting it completely right.

2. Review the definition of $N_G(H)$, the *normalizer* of H in G. Do page 52, 6(a).

3. page 48, number 4. The moral of the story—if G is a finite group, a non-empty subset H is a subgroup if H is closed under operation; however, G is infinite, a non-empty subset H closed under the operation is not necessarily a subgroup.

4. page 60, number 19.