General Mathematics and CPS II

Exercise 10

March 6, 2015

1. Let G be a group, and let H and K be subgroups of G. Show that $H \cap K$ is also a subgroup of G.

2. (Ivanov, p. 41, Exercise.) Let R_α denote the reflection about the line $x = \alpha$. Let G be the (symmetry) group generated by the unit translation along the x-axis and by R_0. Show that $R_\alpha \in G$ if and only if $2\alpha \in \mathbb{Z}$.

3. Draw an ornament corresponding to each of the seven ornament groups, see Ivanov pp. 41–42. Make sure that each example has precisely the symmetries of the respective case, and no more.