

# General Mathematics and CPS II

## Exercise 7

February 25, 2015

1. (Ivanov, p. 36, Problem 14.) Show that
  - (a)  $R_{\ell_1} R_{\ell_2} = R_{\ell_2} R_{\ell_1}$  if and only if  $\ell_1$  and  $\ell_2$  are perpendicular;
  - (b)  $R_{\ell} H_A = H_A R_{\ell}$  if and only if  $A \in \ell$ .
2. Use the matrix form of the equation for a reflection (see handout) to show that the composition of reflections about parallel lines is a translation  $\Pi_{\mathbf{v}}$ . Find an expression for the translation vector  $\mathbf{v}$ .