

**Hints 1-2**

This set of exercises is designed to demonstrate how useful is to present isometries as compositions of reflections. Moreover, as the presentation of some isometries is not unique, it is reasonable to make a good choice (hoping that something will cancel when you compose all the isometries needed). This will solve questions 2.2-2.5.

2.6. (b) Use a countable set of points lying on a unit circle.

2.7. (a) We need to show that  $\langle x - y, x - y \rangle = \langle f(x) - f(y), f(x) - f(y) \rangle$ .

2.8. Surprisingly, reflections are also useful when you study mirrors.