1. Henle 9.14

2. Henle 9.15

3. Show that any pair of parallel lines in hyperbolic geometry are congruent. Recall that parallel (in the text) means something different from ”do not intersect”.

4. Compute the distance between the point i and the line $x = 1$ in the upper half plane model.

5. Consider a bug moving in the upper half space model along the imaginary axis with position $y(t)i$ and suppose that $y(t) \to \infty$ as $t \to \infty$. Show that the distance between the bug and the line $x = 1$ goes to zero as $t \to \infty$. That is, you are showing that the lines $x = 0$ and $x = 1$ get closer and closer together as $y \to \infty$.