1. Henle 13.4

2. Henle 14.3

3. Determine the point of $\mathbb{R}P^2$ that is the intersection of the projective line through $[1, 2, 2]$ and $[2, 3, 3]$ and the projective line through $[0, 1, 2]$ and $[0, 1, 3]$.

4. Find matrices for the projective transformations that take the projective points $[1, 0, 0]$ $[0, 1, 0]$, $[0, 0, 1]$ and $[1, 1, 1]$ to

a) $[-2, 0, 1]$, $[0, 1, -1]$, $[-1, 2, -1]$, and $[-1, 1, -1]$

b) $[0, 1, 0]$, $[1, 0, 0]$, $[-1, -1, 1]$ and $[2, 1, 1]$

Then find the matrix for the projective transformation that takes the points in a) to the points in b)

5. In class we will show how to use projective constructions to do arithmetic on the projective line. Given a on the line, $a \neq 0$, show how to construct a^{-1} such that $a^{-1}a = 1$.