ADDITIONAL EXERCISES ON CONCURRENCE

These are additional exercises for Section III.4; similar problems may appear on the second in-class examination.

6.   Find the circumcenter of the triangle in $\mathbf{R}^2$ with vertices $(1, 1)$, $(5, 5)$ and $(4, 0)$.

7.   Find the orthocenter of the triangle in $\mathbf{R}^2$ with vertices $(\pm 1, 0)$ and $(0, 2)$. [*Hint:* The line L joining $(-1, 0)$ and $(0, 2)$ has equation $y - 2x = 2$. Find the equation of the line M which is perpendicular to L and passes through $(1, 0)$. Explain why the orthocenter is the point where M meets the y-axis.]

For both problems, the numerical answers for the coordinates are expressible in relatively neat terms.