

Homework assignment no. 4

[Due on December 4]

1. Problem P3 from §7 from the textbook (page 279).
2. Problem P5 from §7 from the textbook (also page 279).
3. Consider a circle γ of radius 2 centered at the origin of a coordinate system as the circle in the Poincaré model for hyperbolic geometry. Let $\triangle ABC$ be the hyperbolic triangle with vertices (see the figure 1 below)

$$A = (0, 0)$$

$$B = (1, 0)$$

$$C = (1, 1)$$

Find the coordinates of the point X uniquely determined by the requirements $A * X * B$ and $CD \perp AB$.

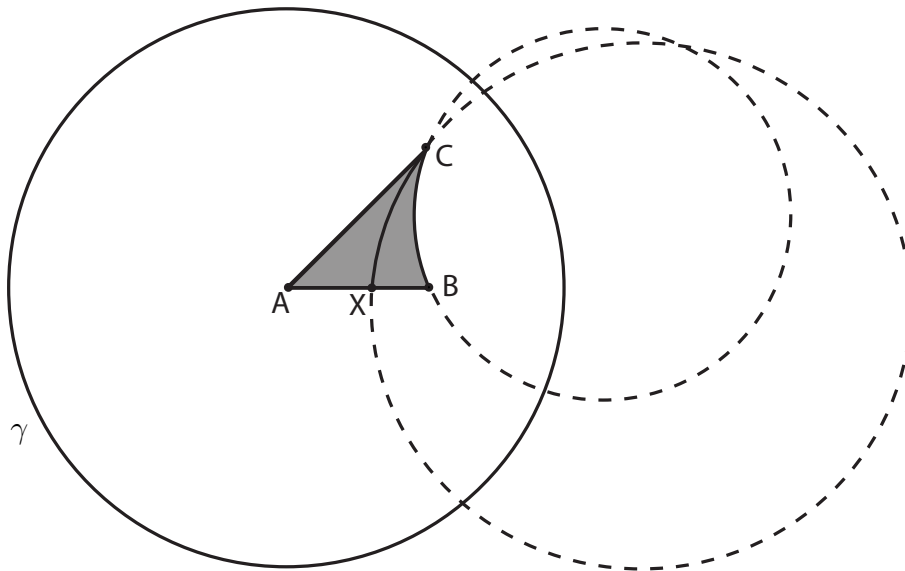


FIGURE 1. An illustration of the triangle $\triangle ABC$. The solid circle is γ , the circle of the Poincaré disk model. The two dotted circles contain the segments BC and XC .