

Homework

due on Wednesday, September 21

Read carefully Chapter 1 of Hartshorne's book. Study Books 1,2,3,4 of the "Elements". Solve problems 1.8, 1.9, 1.10, 2.8, 2.12, 2.14, 2.16 in Chapter 1. Work on several other problems in this chapter.

When you do a construction, write carefully all steps of the construction as discussed in the book. Then provide a proof that your construction works. When you claim that some lines intersect, explain why. Include carefully done drawing using a compass and a ruler.

When you write your solutions to problems 1.8 and 1.9, and claim that some lines intersect, please provide argument why. You can use the parallel postulate when needed. You can also use the following result, which we will prove later:

Crossbar Theorem: If a line going through the vertex A of a triangle ABC enters the interior of the angle BAC then this line intersects the segment BC.