

Assignment 1
Due date : August 16, 2013

1. Given the circumference of a circle, construct the center of the circle.
2. Given a line l , a line segment d and a point O , not lying on l , construct a circle with center O that cuts off a segment congruent to d on the line.
3. Given a segment AB and an angle α , and given another segment d , construct a triangle ABC , with base equal to AB , angle α at C , such that $AB + BC = d$.
4. Given two circles Γ and Γ' , construct a line which is tangent to both the circles. Can you construct all such lines?
5. Given a triangle ABC and a point D on the side BC , draw a line through D which will divide the triangle into two pieces of equal area.
Hint : Let E be the midpoint of BC , Draw EF parallel to AD , which intersects AC at F . Prove that DF is the required line.
6. Given a line l and given two points A and B not on l construct a circle passing through A and B and tangent to l .