Mathematics 226H – Geometry I: Euclidean geometry
TRENT UNIVERSITY, Fall 2006

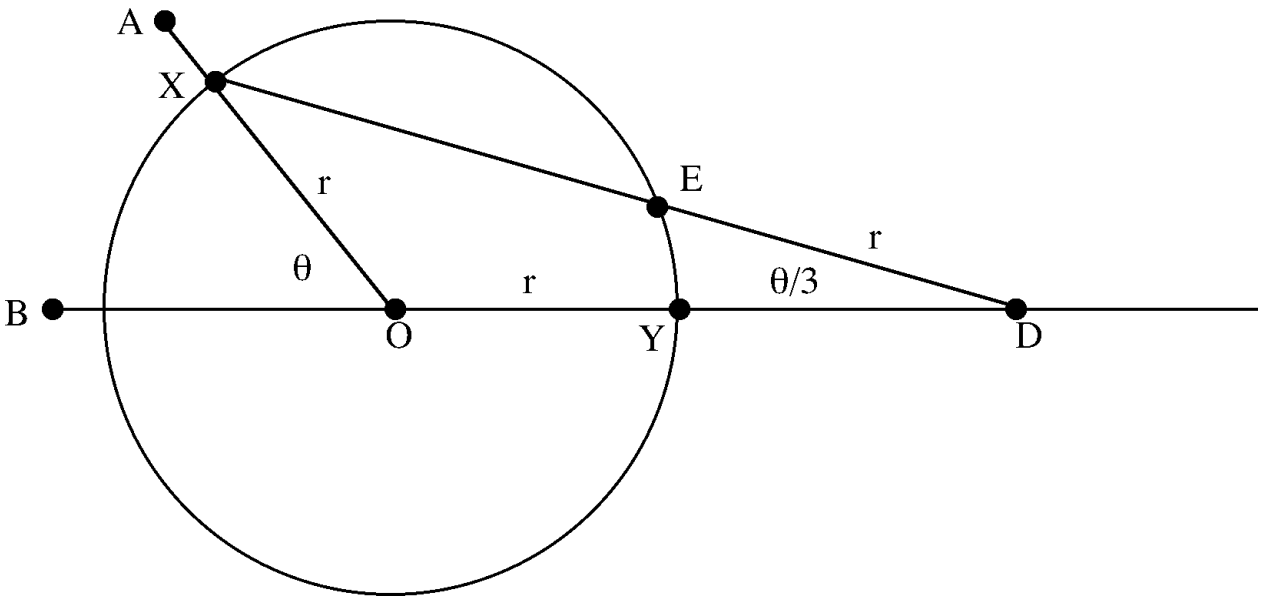
Problem Set #11
Due in class on Friday, 8 December, 2006.

1. Exercise 6A.2 *[5]*

2. Exercise 6A.5 *[5]*

Problem Set #12
Due by Friday, 15 December, 2006.

1. Prove that the following construction for trisecting an arbitrary angle θ using a compass and a ruler with just two marks (a distance of r apart) works.



Given $\angle AOB = \theta$, draw a circle with centre O and radius r. Suppose this circle intersects OA at X and the line extending BO past O at Y. Slide the ruler around until its edge runs through X, one mark is on the line extending OY past Y, and the other mark lies on the circle. Let D be the point on the line where the first mark is and E be the point on the circle where the second mark is. Then $\angle EDY = \theta/3$. *[10]*