

### Section 3.4: Abu Sahl on the Regular Heptagon

**Uses of Conic Sections:** “Doubling the cube” problem. Menaechmos’s contributions:

**Archimedes’ Construction of Regular Heptagon.** What was the problem with his construction?

**Abu Sahl ( أبو سهيل ) al-Kuhi:** What was his original “job”?

What are the methods of *analysis* and *synthesis*?

**First Reduction: From Heptagon to Triangle**

**Second Reduction: From Triangle to Division of a Line Segment in a Certain Way**

**Third Reduction: From Divided Line Segment to Conic Sections**

**Question:** Can conic sections be constructed by straightedge and compass?