# EXAMINATION I: Position Analysis

A planar mechanism is shown in Fig. X (see the table with the codes). The input numerical data with the dimensions of the mechanism for ten cases are given in the table.

Determine the positions of the mechanism (the positions of the joints and the angles of the links) for the input angle $\phi$ and for a complete rotation of the driver link $0 \leq \phi \leq 360^{\circ}$.

The examination should contain:

- write-up for the position equations and detailed explanations (10p);
- MATLAB/*Mathematica*$^{TM}$ program for the input angle $\phi$ (10p);

Due: September 10, 2007

- scale sketches of the mechanism and the constraint conditions for each quadrant of the angle $\phi$ (10p);
- MATLAB/*Mathematica*$^{TM}$ program for a complete rotation of the driver link (20p).

Graduate students: for the complete rotation of the driver link use Method I and II.

Please submit the write-up and programs to: banueli@auburn.edu

Due: September 17, 2007