E 28, Midterm Examination #1, Fall 2001

Name _____

Section # _____

Open Book Examination

Time Limit: 50 minutes

Total Points Available: 100

4 problems

Scores:

1. _____
2. _____
3. _____
4. _____

Total: _____

E 28, Midterm Examination #1, Fall 2001 Name _____

Section # _____

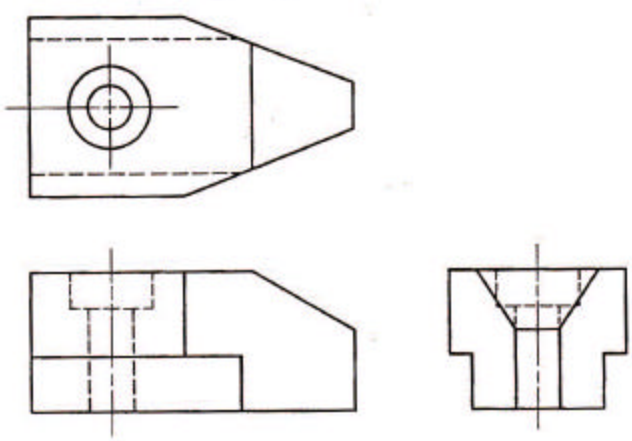
Problem #1 (25 points)

The figure below shows the front, top and right side views of a part that is to be fabricated.

a) Sketch a bottom view of the object in its proper size, location, and orientation with respect to the figure shown.

b) Sketch an isometric pictorial of the object.

It is not necessary to scale or dimension the sketch, or sketch to the exact dimensions, however some reasonable proportions are expected.

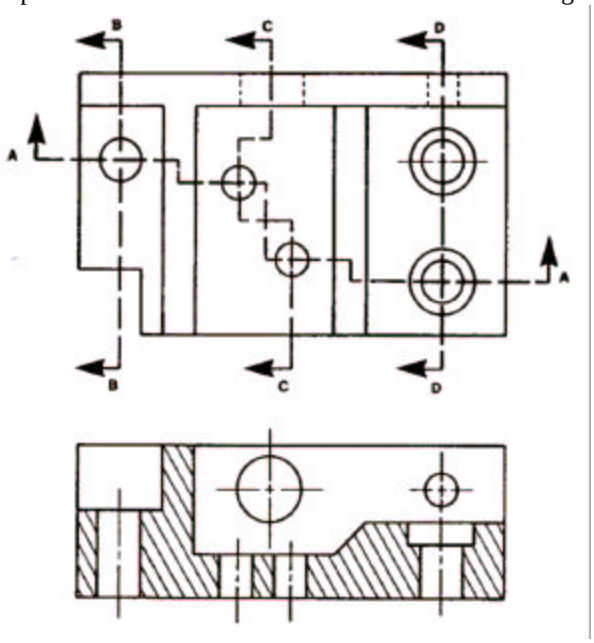


Section # _____

Problem #2 (25 points)

The drawing below shows the top view and Section A-A of a tooling block. Sketch Section B-B, Section C-C, and Section D-D in their proper orientation. Properly label the section views. Do not show hidden lines.

It is not necessary to scale or dimension the sketch, or sketch to the exact dimensions, however some reasonable proportions are expected. The sections views should be sketched large enough to show the detail in each section.



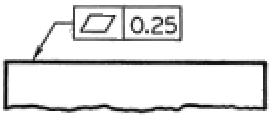
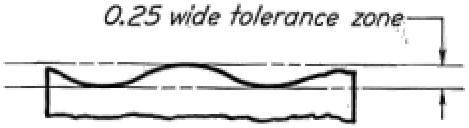
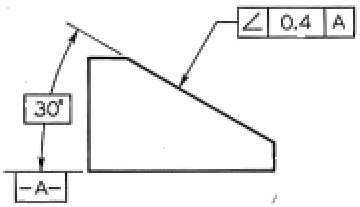
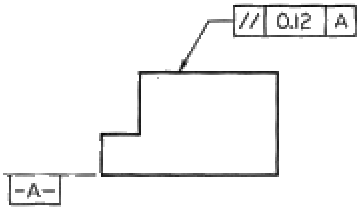
E 28, Midterm Examination #1, Fall 2001 Name

_____

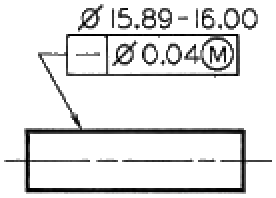
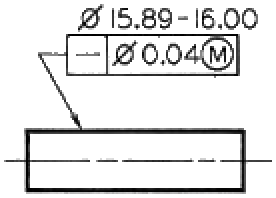
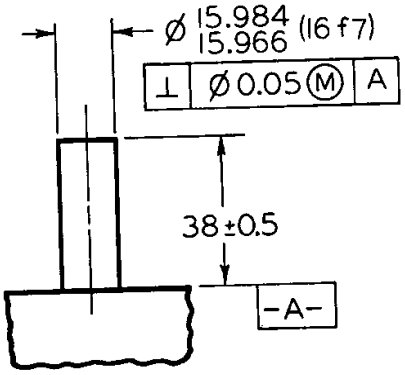
Section # _____

Problem #3 (25 points)

For each figure in the left hand column, draw a figure in the right hand column showing the size and shape of the tolerance zone indicated, along with appropriate dimensions. Show the feature being toleranced in an out-of-true position that is still within the tolerance zone. Explain the shape of the tolerance zone. The first one has been done for you as an example.

This on the drawing:	**Means this:**
	 The surface must be within the specified tolerance of size and must lie between two parallel planes 0.25 apart.
	
	

Section # _____

	**(at diameter 16.00)**
	**(at diameter 15.89)**
	**(at diameter 15.966)**

Problem #4 (25 points)

The design drawing for a steel roof truss is pictured below. The part is to be fabricated in a shop and then shipped to the field as a unit.

Sketch a shop drawing for the part, and show its dimensions. The exterior members are composed of two Ls with both legs of length 4" and thickness 0.5", and the interior members are composed of two Ls with both legs of length 3.5" and thickness 0.375". Members are to be connected via 8"x 0.5" thick steel plates sandwiched between the Ls at each joint (choose any reasonable size and shape for the plates). You may specify either rivets or welding for joining (any reasonable size/number/process). Remember to consider clearances when assigning length dimensions to the individual members (don't worry about calculating exact clearances as long as your choice is reasonable).

It is not necessary to sketch to the exact dimensions; however, some reasonable proportions are expected.