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SID #_____

Engineering 25 Fall Semester 2014 Midterm Exam

90 minutes Closed Book Exam

Problem 1 _____ /40

Problem 2 _____ /30

Problem 3 _____ /30

Total Score _____ /100

Problem #1 40 points

The pictorials of two objects are shown in the figure below.

a. Sketch an isometric view of the result when Object A is rotated around the y-axis by $+90^{\circ}$.

b. Sketch an isometric view of the result when Object B is rotated around the x-axis by -90° , and then about the y-axis by $+90^{\circ}$.

- c. Sketch an isometric view of the resulting interference between A and B after the rotations in (a) and (b) have been performed.
- d. Sketch the reflection of the interference in (c) using the x-y plane as the mirror.

The orientations of the x-y-z axes are to remain the same in all views.





For all pictorial sketches on this exam, shading of surfaces is recommended, but not required.



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Problem #2 30 points

The figure below shows two pictorial drawings of the same object. The drawing on the left is the object as seen from the front/top/right-side, and the drawing on the right is the same object as seen from the rear/top/left-side. Sketch a mulit-view drawing of the object with sufficient orthogonal views and hidden lines to fully define the geometry of every feature. Center-lines and center-marks must be used when needed. Exact sizes are not required, but reasonably accurate proportions are expected. Use 1st angle projection.



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For all pictorial sketches on this exam, shading of surfaces is recommended, but not required.

Problem #3 30 points

The figure below shows the front and right side views of a 3-dimensional object.

- a. On the figure below, add a correct top view. There is no need to add dimensions to the view, however, hidden lines, center-lines and center-marks must be included.
- b. Create an isometric pictorial that shows the front, top, and right side views of the object.



For all pictorial sketches on this exam, shading of surfaces is recommended, but not required.



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