Name _____ Section # _____

SID # _____

Engineering 25
Spring Semester 2015
Final Examination

Read the instructions carefully and make sure you answer all parts of each question.

Print your full name on top of every page, even if it is unused.

Time Limit: 3 hours
Closed Book Exam

Problem 1 _____ /15

Problem 2 _____ /24

Problem 3 _____ /15

Problem 4 _____ /30

Problem 5 _____ /16

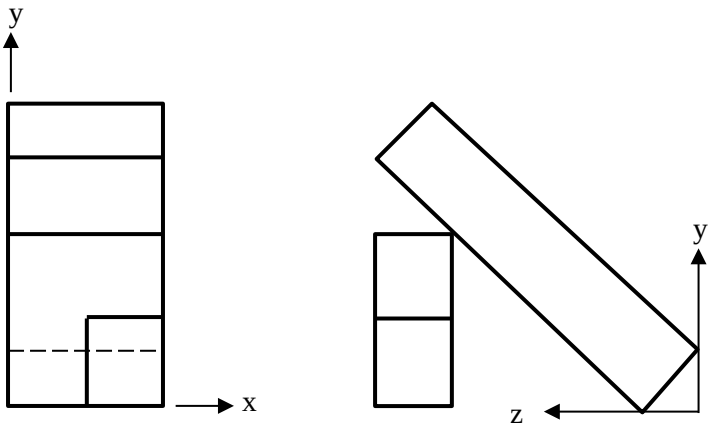
TOTAL EXAM SCORE _____

Problem 1 (15 points)

The front and right side views of an assembly (in 3rd angle projection) are shown below with a set of coordinate axes (which is fixed in space). Draw an isometric pictorial of the assembly, presenting the front, top, and right side views. Starting with the original orientation each time, redraw the pictorial after the specified operations.

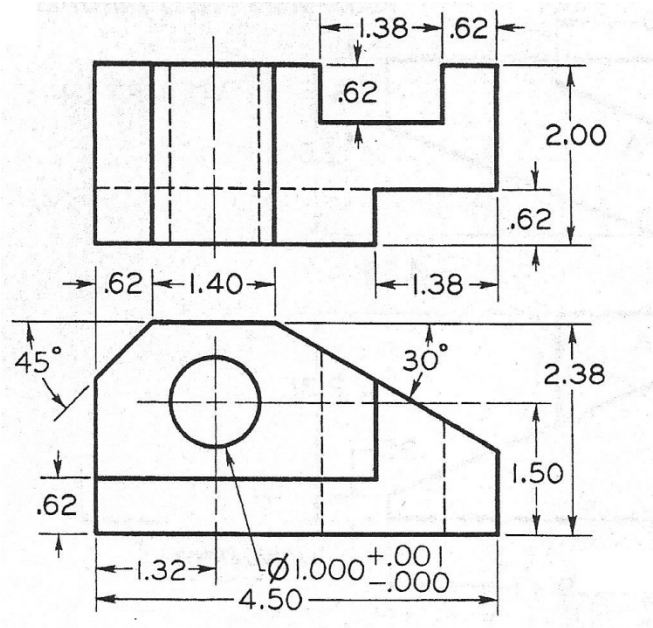
a) 

b) 

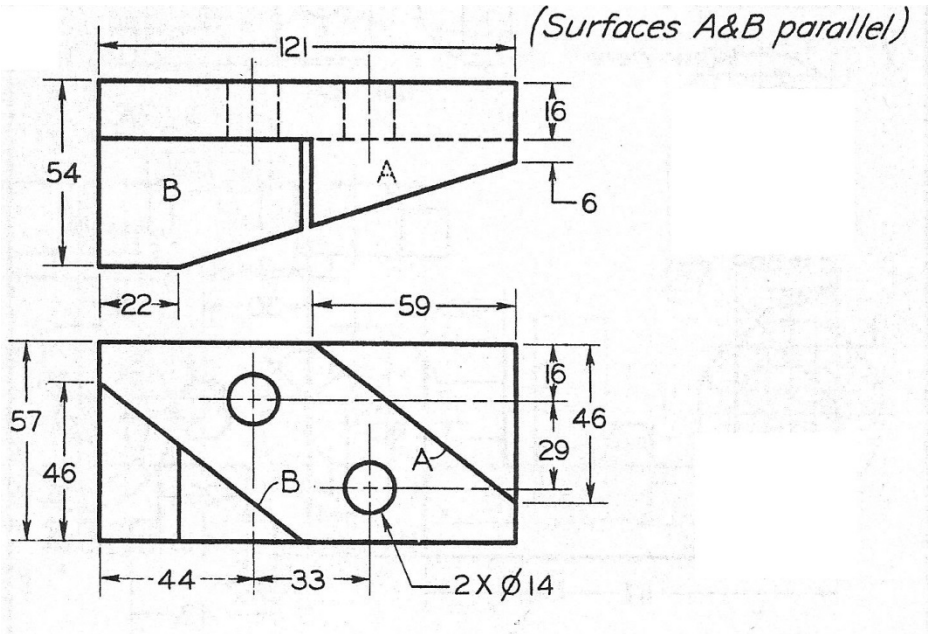


Problem #2 (24 points)

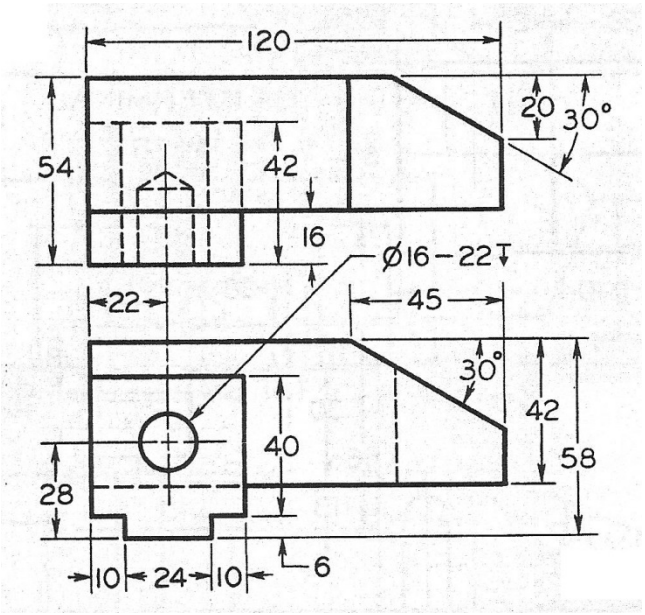
Shown below are two views (in 3rd angle projection) of four different objects. Add the missing views or lines as indicated in their correct location, orientation, and scale for an engineering drawing. You do not need to add dimensions, but some reasonable drawing accuracy is expected.



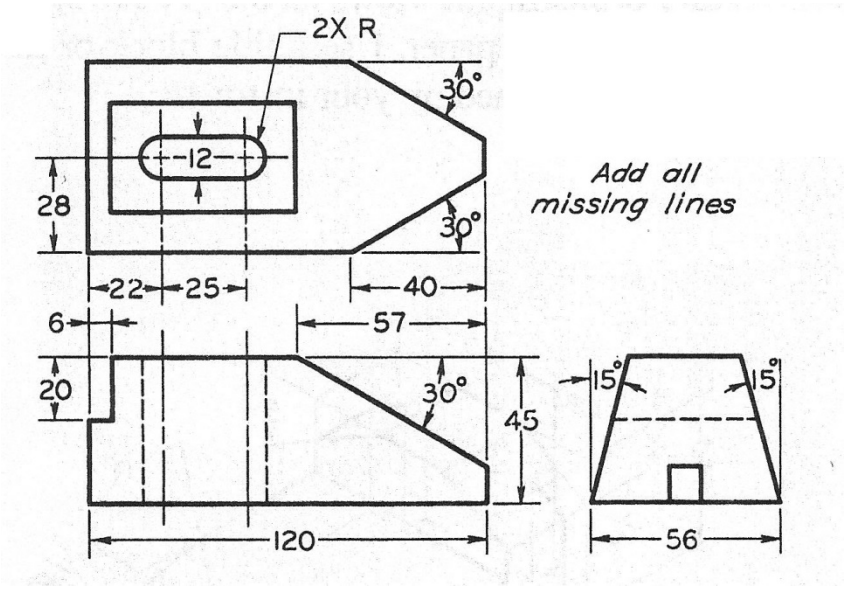
a. Add a right side view.



b. Add a right side view.



c. Add a right side view.

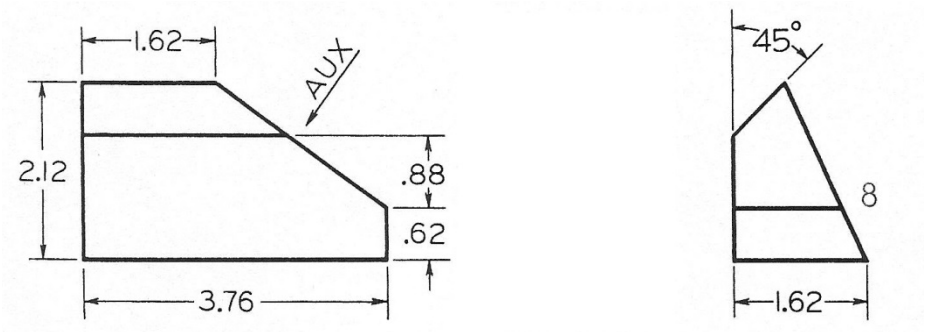


d. Add all the missing lines.

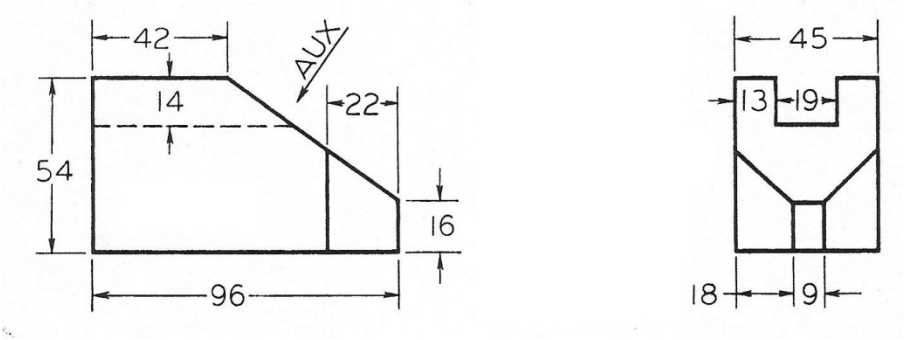
Problem 3 (15 points)

The front and right side views of three different objects are shown below (in 3rd angle projection). For each object, create a partial auxiliary view that shows the true shape of the inclined surface. You do not need to draw the entire object in the auxiliary view. The auxiliary must be in its correct location, orientation and scale for an engineering drawing. You do not need to add dimensions, but some reasonable drawing accuracy is expected. You do not need to show hidden lines. Do not erase your (lightweight) construction lines.

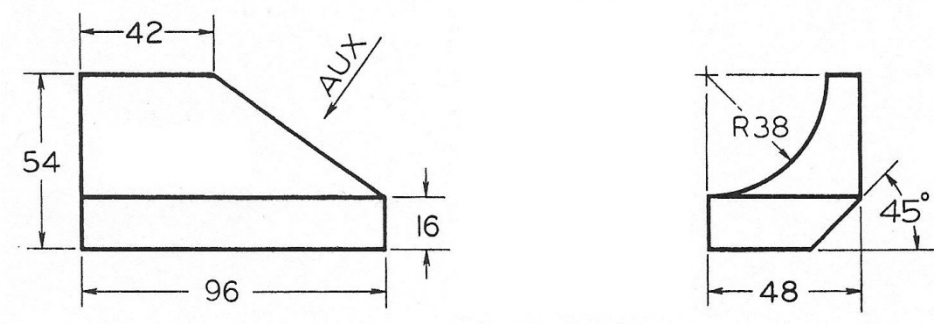
a)



b)



c)



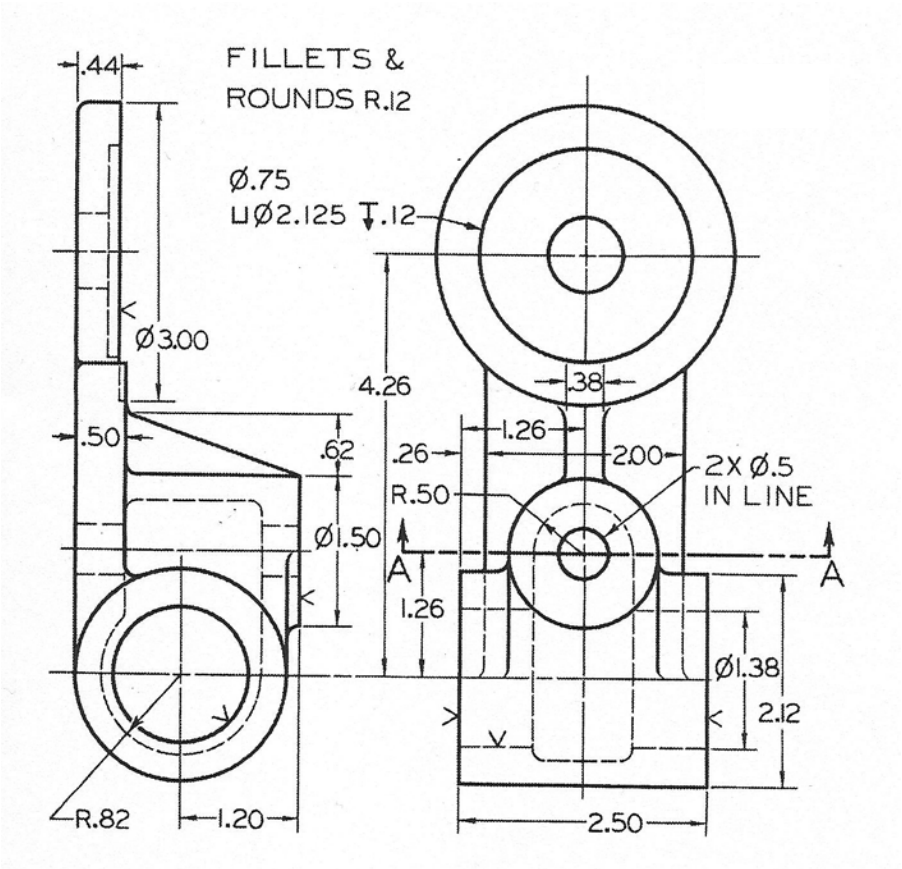
Problem 4 (30 points)

The figure below shows the front and left views of an object (in third angle projection).

a) Add a full section view as the right side view.

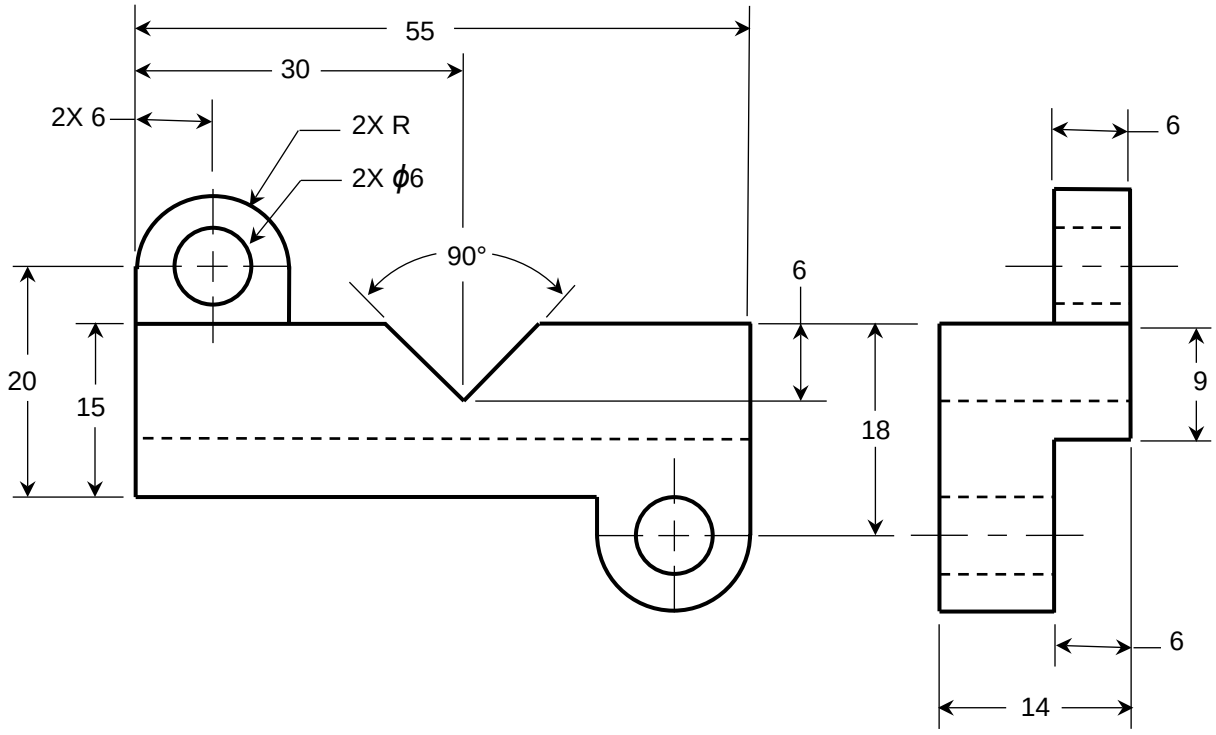
b) Below the front view, draw the removed section view A-A.

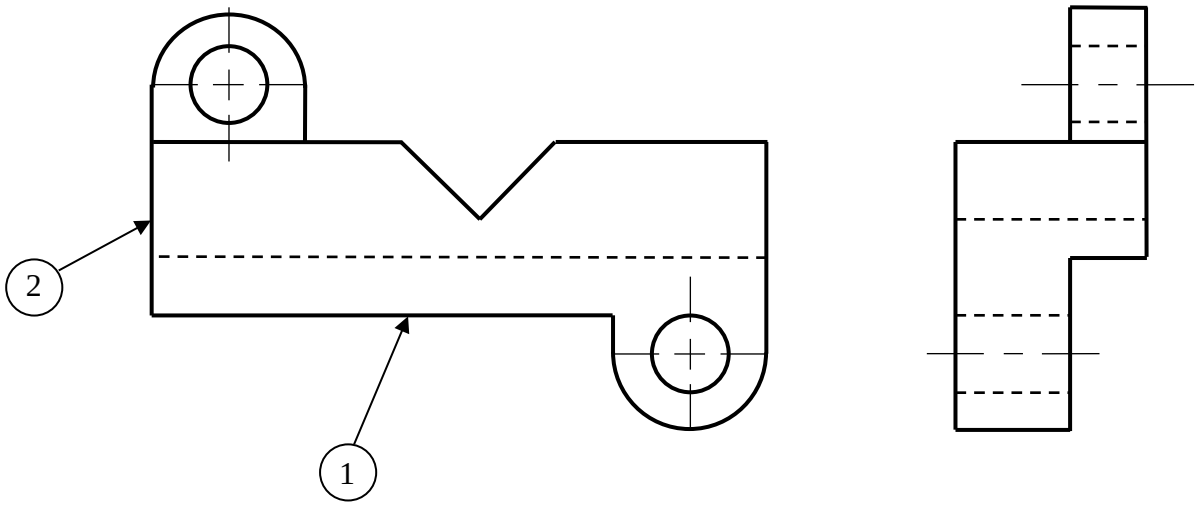
c) Also on the next page, sketch an isometric pictorial that shows the front, top and right sides after the object has been cut in the manner to create the full section view. You do not need to include hidden lines, dimensions, or shading in the pictorial.



Problem 5 (16 points)

The front and right side views of an object are shown below in third angle projection. The dimensions shown are sufficient to fully define its geometry. It is desired to make the drawing fully parametric by adding the necessary geometric and associative constraints so that changing any dimension will corresponding change the geometry in both views, including the hidden lines, center-marks, and center-lines. On the following page, the dimensions on the drawing have been hidden for convenience. Tag each curve on the drawing with a number, and specify the geometric or associative constraint that must be added. This must be done for both the front and the right side views. Do not add additional dimensional constraints to the object geometry. The first two curves have been started (but may or may not be complete) as an example.





Item# Constraints

1 Horizontal, endpoint coincident to 2, … (please complete…)

2 Vertical, endpoint coincident to 1, … (please complete…)

3

4
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