Name. _____

Signature_____

NET ID _____

GEN_ENG_205-2

Engineering Analysis II

Midterm 2

Tuesday May 21, 2019

A. Alarcón

Instructions. Closed book and notes.

Calculators allowed. No other electronic device allowed even if it is used as a calculator.

Do not ask for clarification of the questions. If you think that there is an ambiguity, clearly state your assumption and continue to answer the question.

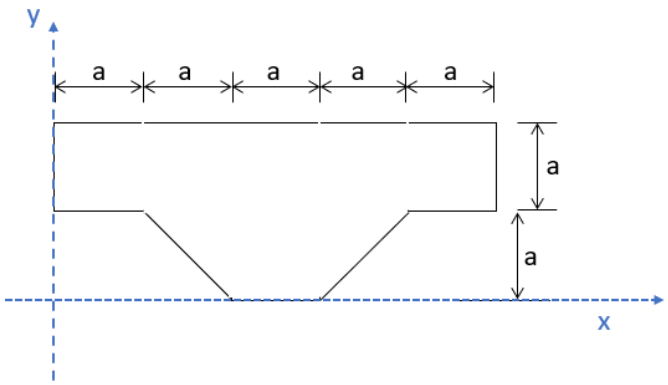
Show all your work, units and **box your final answer**. You can use the left blank pages for scratch calculations. If you need more paper, we will provide some more. There are 3 problems and 2 bonus questions (last page).

Problem	Points	
1	14	
2	34	
3	23	
Bonus	2	
Total	71	

Name_____

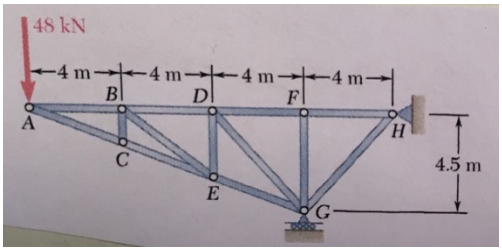
Problem 1 (14 points)

For the section shown in the figure, determine its centroid clearly indicating its components.



Name_____

Problem 2 (34 points)



a) Determine zero force members

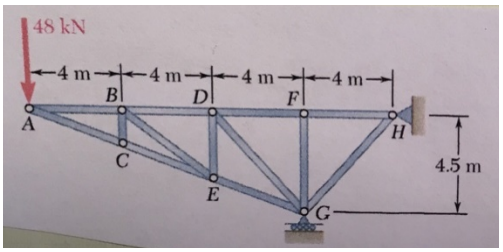
b) Determine forces F_{BD} and F_{CE} with method of sections and indicate whether it is tension or compression.

C) Determine the forces of the rest of the members with the method of joints and indicate whether it is tension or compression.

Check your work carefully; credit will be based on your entries in the table

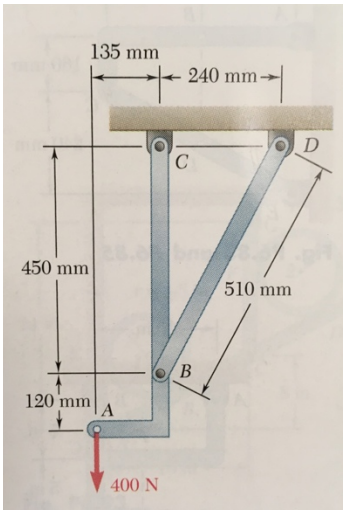
Force	Force (KN)	T or C
F_{AB}		
F_{AC}		
F_{BC}		
F_{BD}		
F_{BE}		
F_{CE}		
F_{DE}		
F_{DF}		
F_{DG}		
F_{EG}		
F_{FG}		
F_{FH}		
F_{GH}		

Name_____



Name_____

Problem 3 (23 points)



Given the frame shown in the figure where C and D are pin supports.

a) Determine the force in member BD clearly indicating its sign.

b) Determine the components of the reaction at C, clearly indicating directions.

Name_____

Bonus

1. How many times have I used the word Equilibrium in class? (1 point)

2. Favorite feature of Torre Repsol (1 point)