UNIVERSITY OF GHANA 109

SCHOOL OF ENGINEERING SCIENCES
FIRST SEMESTER EXAMINATION 2014/2015

AREN 101: ENGINEERING GRAPHICS / FAEN 105: ENGINEERING DRAWING WITH CAD
(3 credits)

INSTRUCTIONS: **ANSWER ALL QUESTIONS**
DRAWING PAPERS (A3) WILL BE PROVIDED
TIME ALLOWED: THREE (3) HOURS

1. Construct the line of intersection and show the hidden details for the two figures whose coordinates are given below:

(15 marks)

	x	y	z	
A	75	40	8	Figure 1
B	50	10	35	
C	35	25	25	
D	65	30	40	Figure 2
E	15	30	40	
F	40	8	8	

2. The coordinates given below show a figure formed by triangles ABC and BCD joined at BC.
   a. Construct the figure with the hidden details on the vertical elevation. **(5 marks)**
   b. Determine the true angle formed by the figure. **(10 marks)**

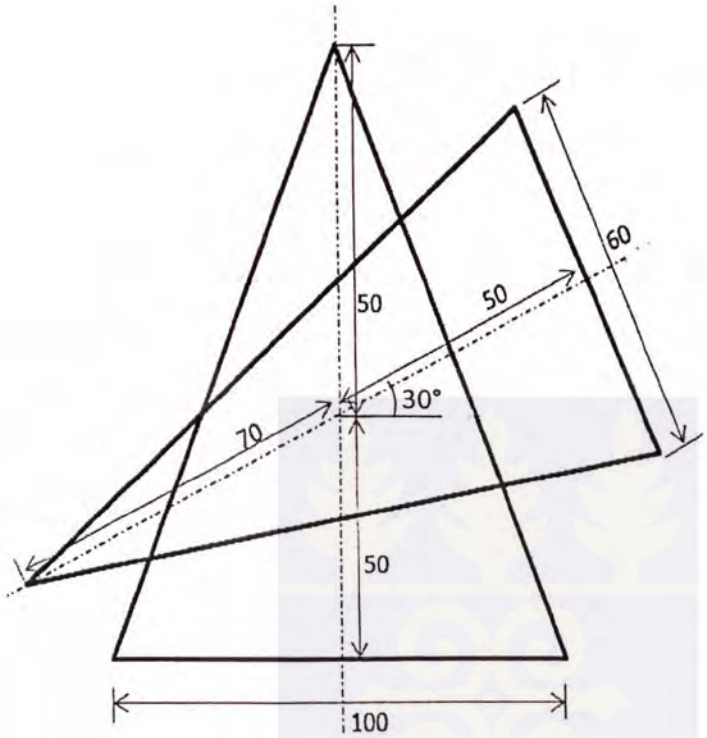
	x	y	z
A	80	20	25
B	60	5	40
C	20	15	10
D	40	30	5

EXAMINERS: DR. A. A. MAHAMA AND MR. S. Y. DORVLO

110

3. Construct the vertical projection of the intersection curve for the two cones shown below. One cone standing vertical and the other inclined at an angle of 30°.

(15 marks)



[Not drawn to scale]

4.

a. Using the coordinates given below, construct the shape of the section of projections that has been cut with a plane projected as P_V and P_H. [$P_V = 36°$; $P_H = 42°$] **(15 marks)**

b. With the rabatment and rotation methods, construct the true figure of the cut surface by the plane within the horizontal elevation. **(20 marks)**

	x	y	z
A	60	15	0
B	25	10	0
C	40	40	0
T	50	40	60

EXAMINERS: DR. A. A. MAHAMA AND MR. S. Y. DORVLO

111

5. Construct the isometric view of the figure whose orthographic projection is shown below. Use a scale of 1: 1 and correct the dimensions and angles to the last 0 or 5 unit.

(20 marks)