UNIVERSITY OF GHANA

SCHOOL OF ENGINEERING SCIENCES

FIRST SEMESTER EXAMINATION 2015/2016
LEVEL 100: BACHELOR OF SCIENCE IN ENGINEERING

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

INSTRUCTIONS: ANSWER ALL QUESTIONS
DRAWING PAPERS (A3) WILL BE PROVIDED
YOU ARE ALLOWED TO DRAW AT THE BACK OF THE A3 PAPER
TIME ALLOWED: THREE (3) HOURS

1. Project the true angle between the points M N and line AB with the given coordinates below.
(10 marks)

	X	Y	Z
A	20	25	30
B	75	20	8
M	46	18	28
N	33	10	12

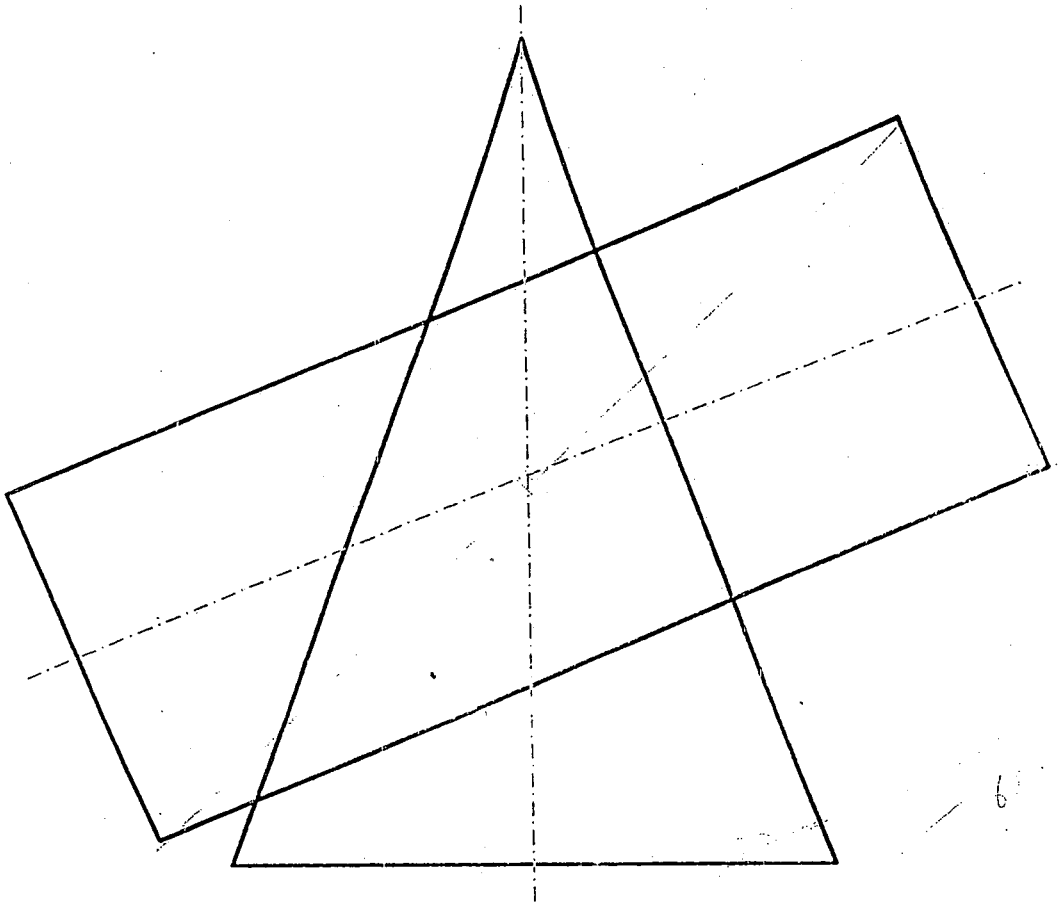
2. Construct the line of intersection and show the hidden details for the two figures whose coordinates are given below:
(20 marks)

	x	y	z	
A	80	45	40	Figure 1
B	40	20	15	
C	16	30	55	
D	75	15	25	Figure 2
E	35	8	60	
F	20	45	25	

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

3. Construct the vertical projection of the intersection curve for the cone and cylinder shown below. The cone is standing vertical and the cylinder inclined at an angle of 35°. Use a scale of 1:1 and correct the dimensions and angles to the last 0 or 5 unit.

(20 marks)



4. Using the coordinates of an oblique plane given as $P_V = 45°$, $P_H = 48°$ and $P_X = 100$ mm;
   a.) Project the complete coordinate values of "Y" for the following details of point AC.

   (5 marks)

   b.) Construct the true figure of the rectangle whose diagonal is line AC, using the rabatment method.

   (20 marks)

	X	Y	Z
A	54	-	10
C	24	-	34

5. Construct the isometric view of the figure whose orthographic projection is shown below. Use a scale of 1:1 and correct the dimensions to the last 0 or 5 unit. (25 marks)