Indian Institute of Technology Kanpur
TA101AA: Engineering Graphics 2021 - 2022
Sem II

Lab Assignment no.8
Lines and Planes

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a) All problems to be done on A4 size sheet in drawing book/sketch book.
b) Write your name, roll no. etc. in the title block.
c) All questions carry equal marks. Full Marks is 100

Question 1

Find the true length of line AB, shown in Figure 1 using the auxiliary plane method taken: (i) from the front view, and (ii) from the top view. (each square is of size 10 x 10 mm) Draw separate figures for (i) and (ii) on the same sheet. Use scale 1:2.

Question 2

Solve problem 1 above using the method of rotation for both cases (i) and (ii). (Each square is of size 10 x 10 mm). Draw separate figures for (i) and (ii) on the same sheet. Use scale 1:1.
Measure and verify if the true length of the line is the same in all the four cases for Q1 and Q2.

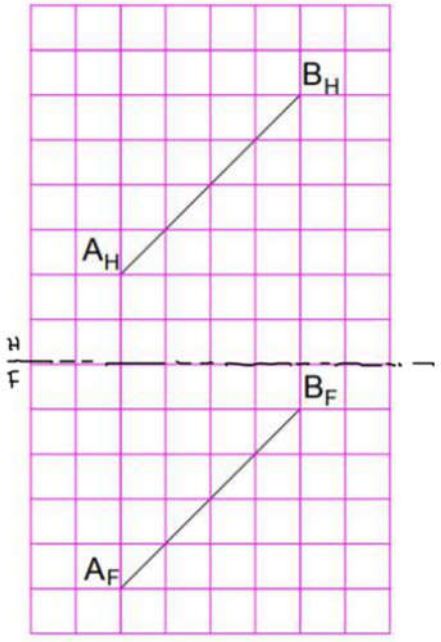

Figure 1 (Q1 & Q2)

Question 3

Find the shortest distance between the two lines AB and CD as given in Figure 2. In the figure two square boxes is 1unit = 10 mm (e.g. coordinate of point BF = (1,1.5) units means (10, 15) in mm). DO not draw the grid lines and use 1:1 scale.

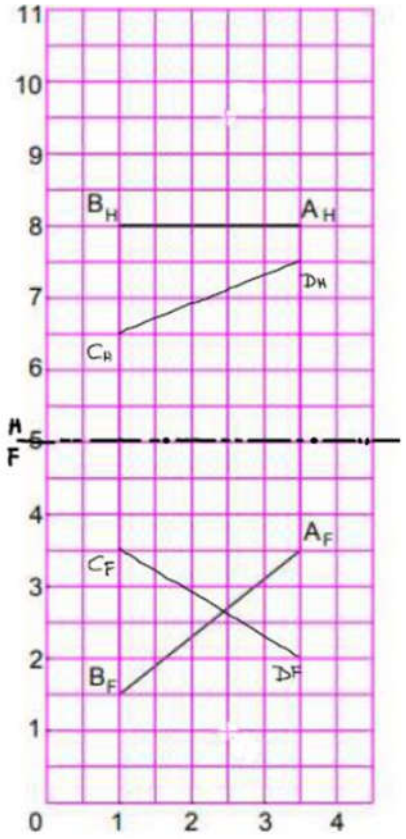

Figure 2 (Q.3)

Question 4

A line AB is established with a bearing N60^0 E with 60 percent positive grade from A. The distance from A to B is 50 mm. Draw the top and front views of AB. The coordinates of A are A_H (10,70) and A_F (10,10). The origin of the hinge line between the H/F plane is located at (0,40) and this line is horizontal such that the y-coordinate of all points on it is 40. Units are in mm.

Question 5

Given the horizontal and vertical projections of a plane ABC as in Figure 3, determine its edge view and true shape starting from an auxiliary view from the horizontal plane.

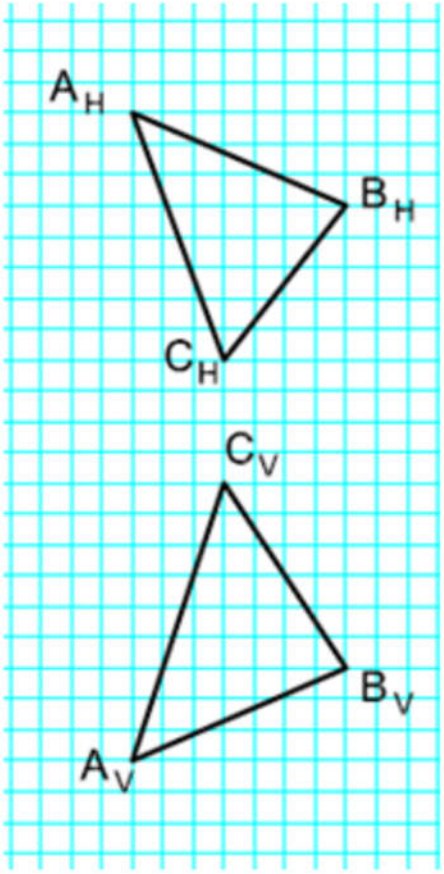

Figure 3 (Q.5)