

# EE5609 Matrix Theory

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Download the latex-file codes from

[https://github.com/kranthiakssy/AI20RESCH14002\\_PhD\\_IITH/tree/master/EE5609\\_Matrix\\_Theory/Assignment-5](https://github.com/kranthiakssy/AI20RESCH14002_PhD_IITH/tree/master/EE5609_Matrix_Theory/Assignment-5)

## ASSIGNMENT-5

GEOLIN

*Problem:*

Triangle Exercises (1.19):

D is a point on side BC of  $\triangle ABC$  such that  $AD = AC$ . Show that  $AB > AD$

*Solution:*

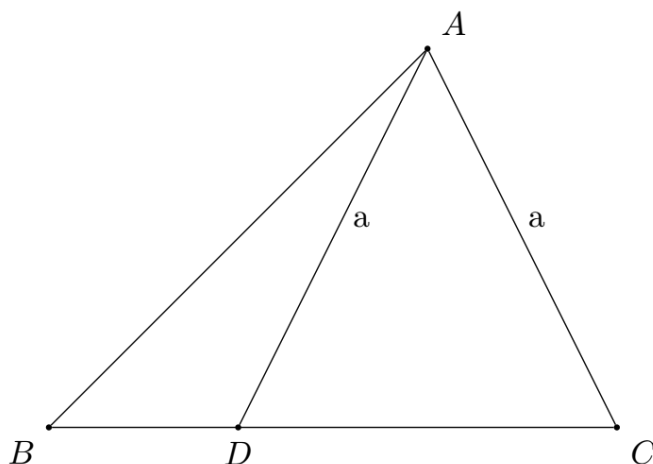


Fig. 0: Triangle generated using LaTeX tikz

The above Fig. 0 shows that, point D placed on side BC of  $\triangle ABC$  such that  $AD = AC$

From the Fig. 0 it is clear that  $\angle ADB > 90^\circ$  and  $\triangle ABD$  forms an obtuse triangle.

Hence, as per the properties of triangles

$$AB^2 > AD^2 + BD^2$$

$\therefore AB > AD$ , for any length of BD.