EE5609: Matrix Theory
Assignment-3

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***Abstract*—This document contains a problem based on properties of triangle.**

Download the python codes from

https://github.com/sahilsin/MatrixTheory/tree/master/Assignment3/codes

and latex-tikz codes from

https://github.com/sahilsin/MatrixTheory/tree/master/Assignment3/figs

1 PROBLEM

ABC is a right angled triangle in which $\angle A = 90^\circ$ and AB=AC find $\angle B$ and $\angle C$.

2 SOLUTION

Given: Consider a right $\triangle ABC$ with sides AB, BC, AC right angled at $\angle A$ and AB=AC.

Property used: Angle opposite to equal sides are equal that is $\angle ABC = \angle ACB$

Using property that sum of all the angles of the triangle is equal to 180°.

$$\angle BAC + \angle ABC + \angle ACB = 180^\circ \tag{2.0.1}$$

Let $\angle ABC = \angle ACB = x$

$$90^\circ + x + x = 180^\circ \tag{2.0.2}$$
$$2x = 90^\circ \tag{2.0.3}$$
$$x = 45^\circ \tag{2.0.4}$$

Hence $\angle B = \angle C = 45^\circ$.

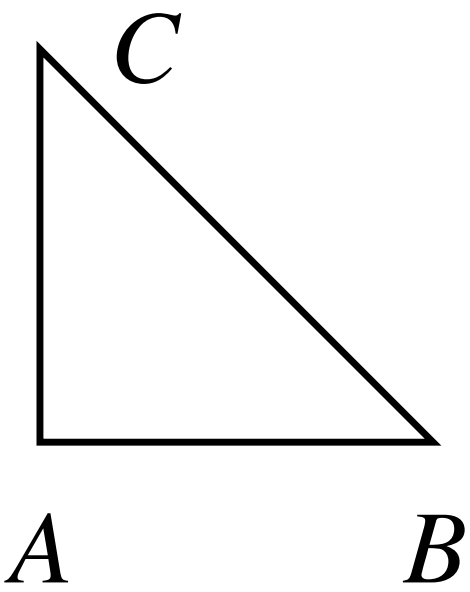

Fig. 0: Right Angled Triangle