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CLASS: VII

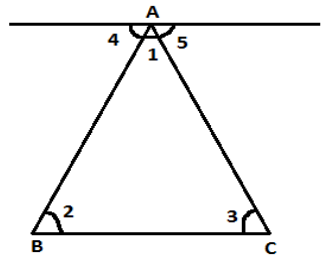
SUB.: MATHS (NCERT BASED)

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Theorem: Prove that the sum of angles of a triangle is 180° .

PROOF

Given :A triangle ABC.



To prove : $\angle A + \angle B + \angle C = 180^\circ \Rightarrow \angle 1 + \angle 2 + \angle 3 = 180^\circ$

Construction :Through A, draw a line l parallel to BC.

Proof :Since $l \parallel BC$. Therefore,

$$\angle 2 = \angle 4 \quad \text{eq(i)} \quad [\text{alternate interior angles}]$$

$$\angle 3 = \angle 5 \quad \text{eq(ii)} \quad [\text{alternate interior angles}]$$

adding eq(i)and(ii)

$$\text{Therefore, } \angle 2 + \angle 3 = \angle 4 + \angle 5$$

$$\angle 1 + \angle 2 + \angle 3 = \angle 1 + \angle 4 + \angle 5 \quad [\text{adding } \angle 1 \text{ both Side}]$$

$$\angle 1 + \angle 2 + \angle 3 = \text{Straight angle} \quad [\text{Straight angle} = 180^\circ]$$

$$\angle 1 + \angle 2 + \angle 3 = 180^\circ$$

Thus, the sum of three angles of a triangle is 180° .

Do Your Self

Revise this theorm five times