

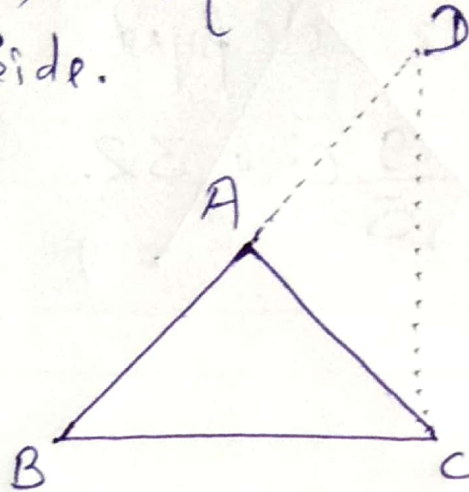
12/09/xx

Class-IX (MATHS)

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Prove that Sum of any two Sides of a triangle is more than the third Side.

Ans →



To prove: $\Rightarrow AB + AC > BC$ $\Rightarrow BC + AC > AB$ $\Rightarrow AC + BC > AB$

Const: ~~Draw~~ Produce BA to D such that $AD = AC$, Join DC

Proof: $\because AD = AC$ So $\angle ADC = \angle ACD$

Now, $\because \angle ADC = \angle ACD$

adding $\angle BCA$ on R.H.S

$$\angle ACD + \angle BCA > \angle ADC$$

$$\angle BCD > \angle ADC$$

$$BD > BC$$

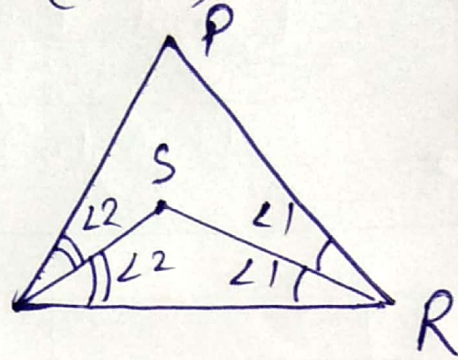
$$BA + AD > BC$$

$$BA + AC > BC \quad \left\{ \because AD = AC \right\}$$

$$\therefore \boxed{AB + AC > BC}$$

(2) Prove that difference of any two sides of a triangle is less than third side. (H.W)

(3) If $PQ > PR$ and SQ and SR bisect $\angle Q$ and $\angle R$.



Prove that

$$\boxed{SQ > SR}$$

Prf:

$$\because PQ > PR$$

$$\angle 1 > \angle 2$$

$$\angle 1 > \angle 2$$

$$\therefore \text{In } \triangle SQR$$

$$\boxed{SQ > SR}$$