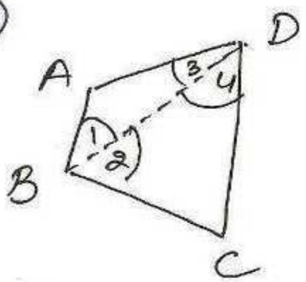
(19)



given AB is shortest, CD . largest side of $\square ABCD$

to check $\angle B > \angle D$ or $\angle D > \angle B$

const - join BD

proof In $\triangle ABD$

$AD > AB$

$\Rightarrow \angle 1 > \angle 3 \ \cdots (I)$ [longer side has greater angle opp. to it]

In $\triangle BCD$

$CD > BC$

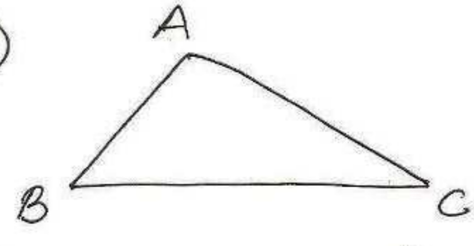
$\Rightarrow \angle 2 > \angle 4$ (do) $\cdots (II)$

$(I) + (II)$

$\angle 1 + \angle 2 > \angle 3 + \angle 4$.

$\angle B > \angle D$

(20)



to prove $\angle A > \frac{2}{3}$ rt $\angle$

proof In $\triangle ABC$

$BC > AB$

$\angle A > \angle C \cdots (I)$

[In a $\triangle$ longer side has greater angle opp. to it]

$BC > AC$

$\Rightarrow \angle A > \angle B \cdots (II)$

$(I) + (II)$

$2\angle A > \angle B + \angle C$

adding $\angle A$ on both sides

$3\angle A > \angle A + \angle B + \angle C$

$3\angle A > 180^\circ$

$\Rightarrow \angle A > \frac{180}{3}$

$> \frac{2}{3} \times 90$

$\Rightarrow \angle A > \frac{2}{3}$ rt angle

NCERT Exemplar Sols. by Dev Anoop (Bathinda)