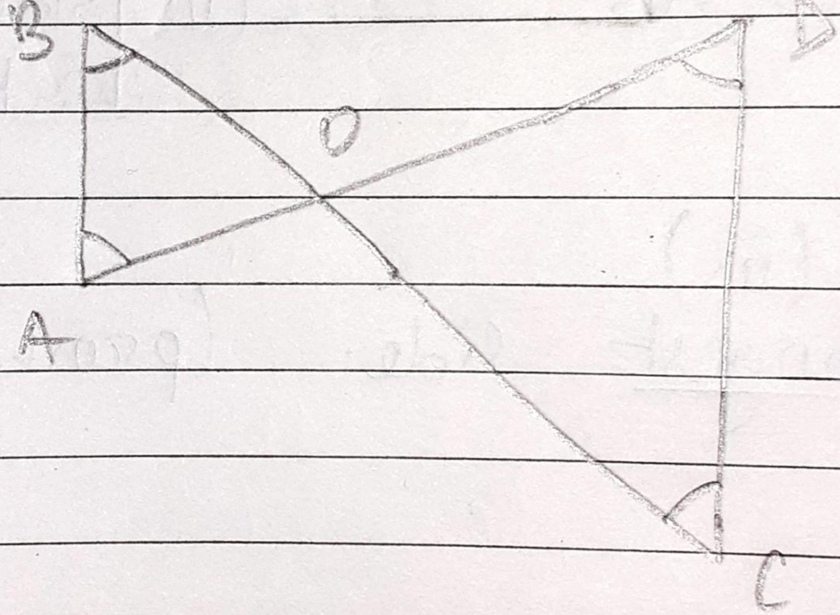
H.W
18.7.21

3.

EX. 7.4




Given :- $\angle B < \angle A$

$\angle C < \angle D$

To prove :- $AD < BC$

Proof :- In $\Delta AOB$

$\angle B < \angle A$

$\Rightarrow OA < OB$ —— (i.) [sides opposite to larger angle is greater.]

In $\Delta COD$

$\angle C < \angle D$

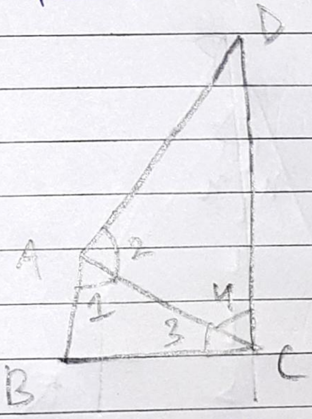
$\Rightarrow OB < OC$ —— (ii.) [sides opposite to larger angle is greater.]

Adding (i.) & (ii.)

$OA + OD < OB + OC$

$\Rightarrow AD < BC$ (proved)

4. Ans :-




Given :- AB is the smallest
CD is the largest

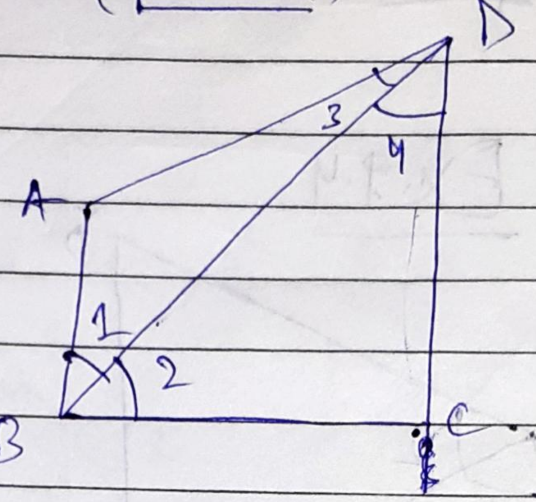
To prove :- $\angle A > \angle C$
$\angle B > \angle D$

Construction :- Join AC

<u>Proof</u> :- In $\Delta ABC$
AB is smallest
$AB < BC$
$\Rightarrow \angle 3 < \angle 1$ — (i.) [angles opposite to larger side is greater.]

In $\Delta ACD$
CD is largest
$AD < CD$
$\Rightarrow \angle 4 < \angle 2$ — (ii.) [angles opposite to larger side is greater.]

Adding (i.) & (ii.)
$\angle 3 + \angle 4 < \angle 1 + \angle 2$
$\Rightarrow$ <u>$\angle C < \angle A$ (proved)</u>




Construction :- Join BD

Proof :- In $\Delta ABD$

AB is the smallest

$AB < AD$

$\Rightarrow \angle 3 < \angle 1$ — (i) [angles opposite to larger side is greater.]

In $\Delta BCD$

CD is the largest

$BC < CD$

$\Rightarrow \angle 4 < \angle 2$ — (ii) [angles opposite to larger side is greater.]

Adding (i) & (ii)

$\angle 3 + \angle 4 < \angle 1 + \angle 2$

$\Rightarrow$ $\angle D < \angle B$ (proved)