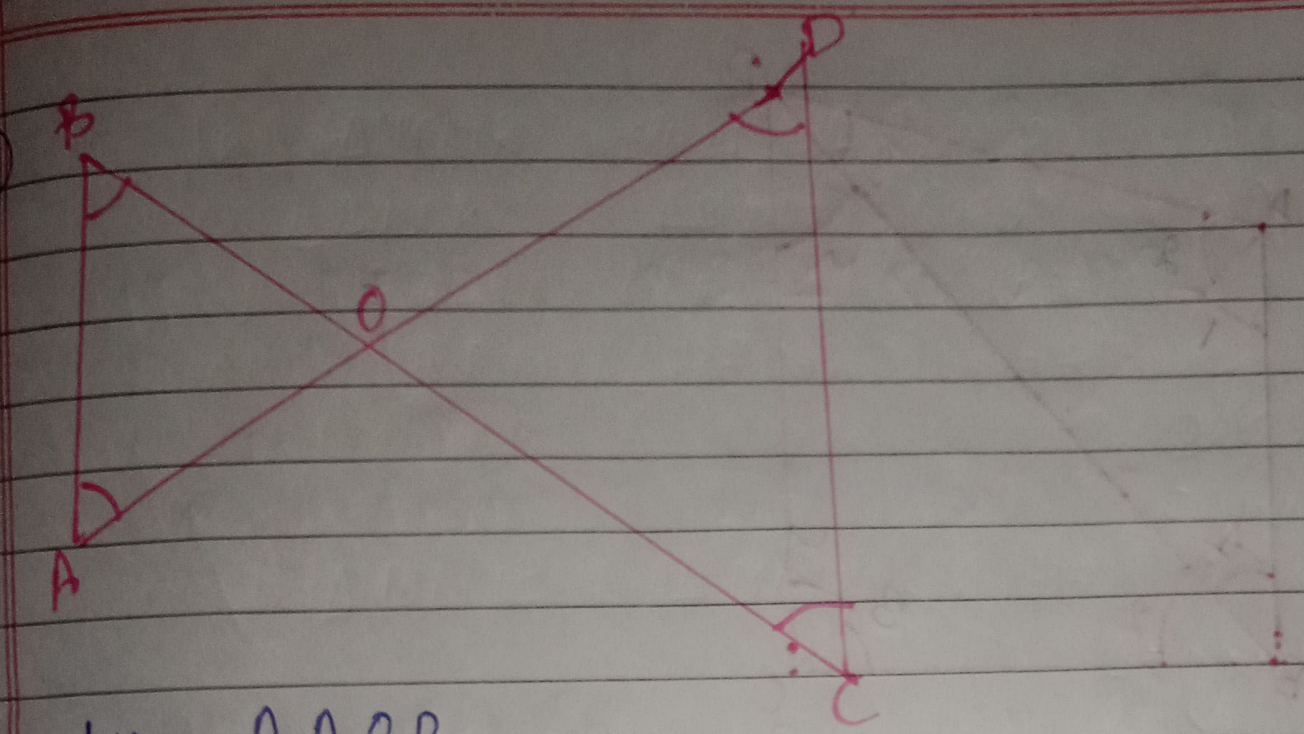
Name - Ritu Rawna Barik
Class - IX 'A'
School no - 2011
Subject - Maths



In $\triangle AOB$

$\angle B > \angle A$

$AO < BO$ (Side opposite to Smaller angle is Smaller) — (1)

In $\triangle COD$

$\angle C < \angle D$

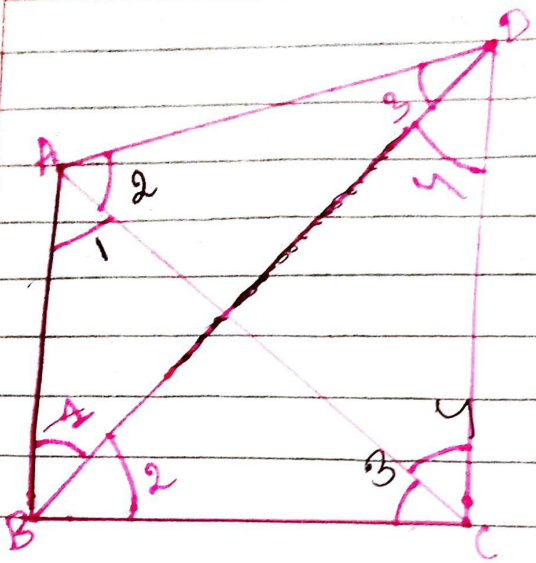
$OD < OC$ (Side opposite to Smaller angle is Smaller) — (2)

Adding eq (1) and (2)

$AO + OD < BO + OC$

$AD < BC$

(4)



Lets join AC

In $\triangle ABC$

AB is the smallest

$AB < BC$

$\angle 3 < \angle 1$ (Angle opposite to larger side is greater) — (1)

In $\triangle ADC$

CD is the largest

$AD < CD$

$\angle 4 < \angle 2$ (Angle opposite to larger side is greater) — (2)

Adding eq (1) and (2)

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

$\angle C < \angle A$

Let join BD

In $\triangle ABAD$
AB is the smallest
$AB < AD$
$\angle 3 < \angle 1$ (Angle opposite to larger side is greater

In $\triangle BCD$,
CD is the largest
$BC < CD$
$\angle 4 < \angle 2$ (Angle opposite to larger side is greater)

Adding Eq (1) and (2)

$\angle 8 + \angle 7 < \angle 5 + \angle 6$

$\angle D < \angle B$