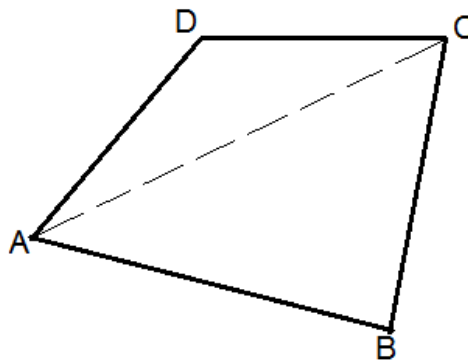


CBSE HOTS Solutions Class IX

Prove perimeter of a quadrilateral is greater than twice of any side



Given: Quadrilateral ABCD

To Prove: Perimeter of quadrilateral ABCD $>$ 2BC

Construction: Join AC

Proof: In $\triangle ABC$

$$AB + AC > BC \quad \dots (i)$$

In $\triangle ADC$

$$CD + DA > AC \quad \dots (ii)$$

Adding equations (i) and (ii)

$$AB + AC + CD + DA > BC + AC$$

$$\Rightarrow AB + CD + DA > BC$$

Adding BC on both sides

$$AB + BC + CD + DA > 2BC$$

Perimeter of quad ABCD $>$ 2 of any side.