CHAPTER 03

Understanding Quadrilaterals

Angle sum property of quadrilateral:

Statement:

Sum of the angles of a quadrilateral is 360^o.

Given:

ABCD is a quadrilateral AC is one of its diagonals.

To prove:

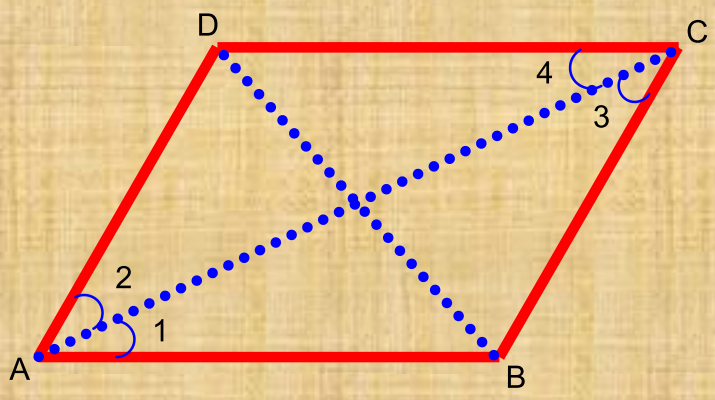
$\angle A + \angle B + \angle C + \angle D = 360^0$

Proof:

In ΔABC, we have

$m\angle 1 + \angle B + m\angle 3 = 180^0$ ..... (1)

[Using angle sum property of a triangle]



In ΔADC, we have

$m\angle 2 + \angle D + m\angle 4 = 180^0$ ..... (2)

[Using angle sum property of a triangle]

Adding (1) & (2), we have

$m\angle 1 + \angle B + m\angle 3 + m\angle 2 + \angle D + m\angle 4 = 180^0 + 180^0$

$\Rightarrow (m\angle 1 + m\angle 2) + \angle B + (m\angle 3 + m\angle 4) + \angle D = 360^o$

$\Rightarrow \angle A + \angle B + \angle C + \angle D = 360^0$

$\therefore$ Sum of the angles of a quadrilateral is 360^o.