Mathematics

(OTBA - 2017) (Theme 1: Solving Mystery of messed up fields)
(Class – IX)

Question 2:

Listening to Dorjee's statement:

"*My farm was adjacent to Krishna's farm and one side was along the boundary. In my farm all sides were equal.*"

Roshni concluded that farm must be in the shape of a rhombus or square. Do you agree with her opinion? Justify.
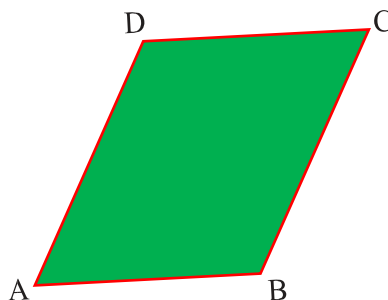
Answer 2:

Here,

Properties of Quadrilateral

If pair of opposite sides of quadrilateral are equal, it is a parallelogram.

A parallelogram with all sides equal is either a rhombus or a square.

Given: A quadrilateral ABCD with AB = BC = CD = DA.

To find: Type of quadrilateral ABCD.

Proof: Given that

$AB = CD$ \qquad\qquad [Given]

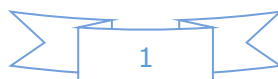$AD = BC$ \qquad\qquad [Given]

$\Rightarrow$ ABCD is a parallelogram.

[**Theorem:** *If opposite sides of a quadrilateral are equal, it is a parallelogram.*]

But $AB = CD$ \qquad\qquad [Given]

$\Rightarrow$ ABCD is a rhombus or a square.

[***Theorem:*** *If the adjacent sides of parallelogram are equal, it is a rhombus.*]

So, we are agree with Roshni's opinion that the field will be either square or rhombus.