



Diagonally Square Proof Sorter

The angles in a triangle add up to 180° , so the third angle (where the diagonals meet) must equal $180-45-45^\circ$, which is 90° .

All four sides of a square are equal in length and opposite sides are parallel, therefore the diagonal will 'cut' each 90° angle exactly in half.

A square has four equal angles. Each angle is 90° .

This means that each of the four triangles made by the diagonals has two 45° angles.

Therefore the diagonals of a square always meet at 90° .

This will always be the case, no matter how long the sides of the square.

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