

# Download How To Prove That A Parallelogram With Equal Diagonals Is A Rectangle

Prove that a quadrilateral is a parallelogram with diagonals with help from an experienced math tutor and writer in this free video clip. Expert: Ryan Malloy Filmmaker: Patrick Russell

Question 392003: 1. how to prove if the diagonals in a parallelogram are perpendicular, then the parallelogram is a rhombus. 2. how to prove if the diagonals in a parallelogram are congruent, then the parallelogram is a rectangle

Here we will prove that a parallelogram, whose diagonals are of equal length, is a rectangle. Given: PQRS is a parallelogram in which  $PQ = SR$ ,  $PS = QR$  and  $PR = QS$ .

By Mark Ryan . A good way to begin a proof is to think through a game plan that summarizes your basic argument or chain of logic. The following examples of parallelogram proofs show game plans followed by the resulting formal proofs.

(Since the opposite sides of the parallelogram are already known to be equal, we then have that all three sides of the triangles are equal) So, angle B = angle C. Now, since it's a parallelogram, you also know that angle B + angle C = 180.

Any rectangle will have diagonals that are equal. Don't forget that since squares are also a special type of rectangle that they would also have congruent diagonals as well.

By Mark Ryan . There are three ways to prove that a quadrilateral is a rectangle. Note that the second and third methods require that you first show (or be given) that the quadrilateral in question is a parallelogram:

Step 3: Next, prove that the parallelogram is a rectangle. We can do this by showing that the diagonals are congruent or by showing that one of the angles is a right angle. It may be easier to show that one of the angles is a right angle because we have already computed all of the slopes.

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