Answer on Question#43055-Math-Geometry

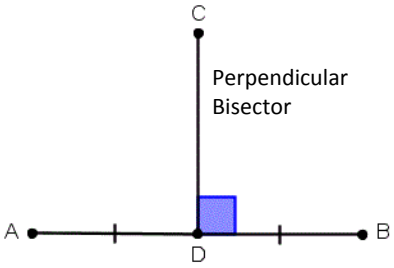
Question

Examples of topic perpendicular and angle bisectors plus explanation

Answer

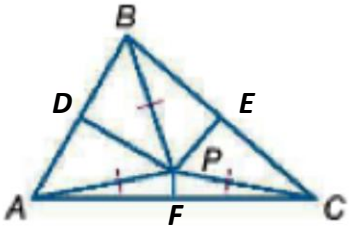
In geometry, bisection is the division of something into two equal or congruent parts, usually by a line, which is then called a bisector. The most often considered types of bisectors are the **perpendicular bisector** and the **angle bisector**.

The **perpendicular bisector** is a line that passes through the midpoint of a given segment:



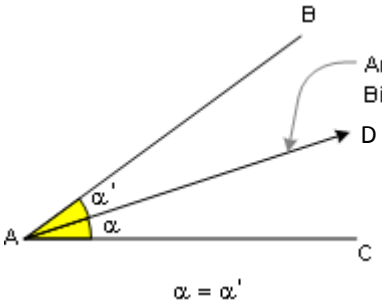
CD is a perpendicular bisector of segment AB.
AD = DB

In the triangle ABC in figure below DP, EP and FP are examples of perpendicular bisectors of the triangle sides.



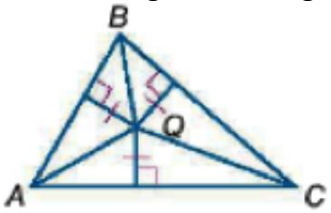
DQ is bisector of side AB (AD=DB), EQ is bisector of side BC (BE=EC) and FP is bisector of side AC (AF=FC).

The **angle bisector** is a line that passes through the apex of an angle that divides it into two equal angles:



AD is an angle bisector of the angle ∠ BAC.
∠ BAD = ∠ DAC

In the triangle ABC in figure below AQ, BQ and CQ are examples of angle bisectors of a triangle.



AQ is bisector of ∠CAB (∠CAQ = ∠QAB), BQ is bisector of ∠ABC (∠ABQ = ∠QBC) and CQ is bisector of ∠BCA (∠BCQ = ∠QCA).