

Answer on Question#43053-Math-Geometry

Question

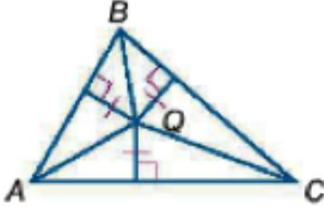
Show examples of bisectors in triangles

Answer

There are two types of bisectors: angle bisectors and perpendicular bisectors.

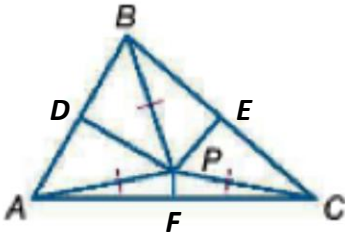
An **angle bisector** divides the angle into two angles with equal measures. An angle only has one bisector. Each point of an angle bisector is equidistant from the sides of the angle.

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



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

Perpendicular bisectors in triangles divide sides of triangles into two equal parts. In figure below **DP, EP and FP are examples of perpendicular bisectors** of a triangle.



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

Interesting note:

an intersection point of the angle bisectors (Q) is equidistant from triangle sides.

an intersection point of the perpendicular bisectors (P) is equidistant from triangle vertices.