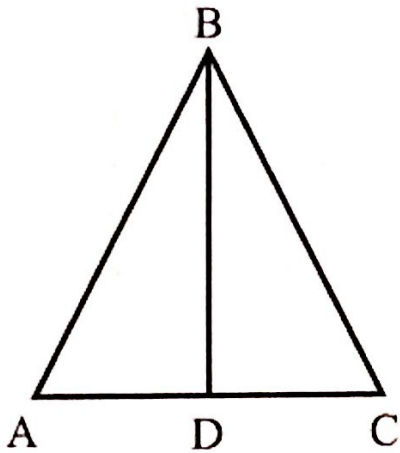


In paragraph form write a formal proof for each of the following questions. Be sure to use proper terminology throughout this assignment.

1.



Given:  $\overline{BD}$  is a perpendicular bisector to  $\overline{AC}$

Prove:  $\triangle ABC$  is isosceles

In order to prove triangle A, B, C is isosceles, I need to show it has 2 congruent sides or angles. Since segment B, D is perpendicular to segment A, C the measure of angle B, D, A and the measure of angle B, D, C is 90 degrees. In addition, since segment B, D bisects A, C I know that segment A, D is congruent to D, C by definition of perpendicular bisector. I know segment B, D is congruent to itself by the reflexive postulate so triangle A, B, D and triangle C, B, D are congruent by Side angle side. Finally, segment B, A is congruent to B, C because corresponding parts of congruent triangles are congruent. Therefore, triangle A, B, C is isosceles.