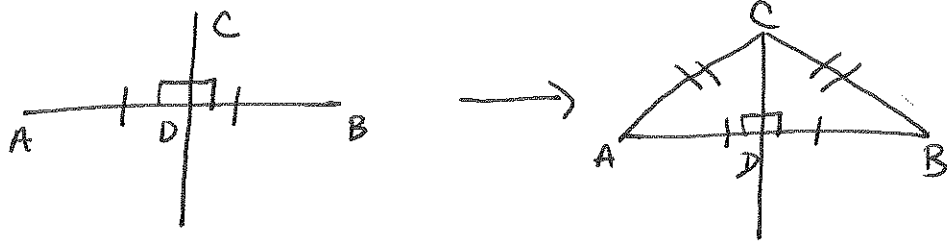


5.2 Bisectors in Triangles

Perpendicular bisector theorem

* If a point is on the \perp bisector of a segment, then it is equidistant from the endpoints of a segment

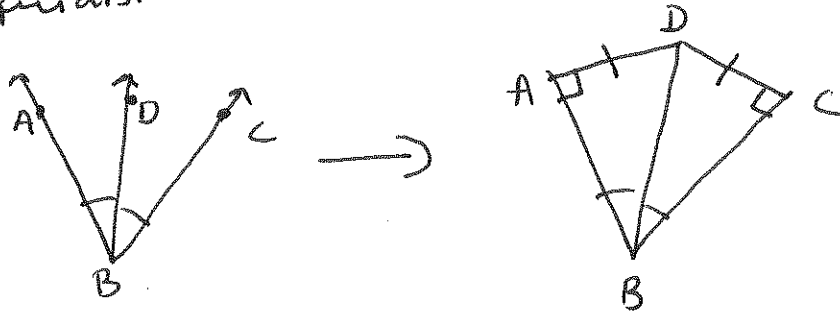


Converse of the \perp bisector theorem

* If a point is equidistant from the endpoints of a segment, then it is a point on the \perp bisector of the segment

Angle Bisector Theorem

* If a point is on the bisector of an angle, then it is equidistant from the sides of the angle



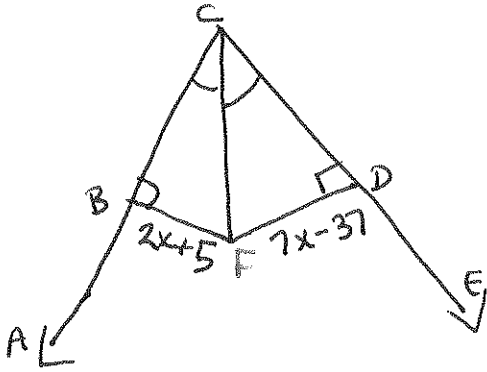
* The distance from a point to a line is the length of the \perp segment from the point to the line

Converse of angle bisector theorem

* If the point \odot in the interior of an angle is equidistant from the sides of the angle, then the point is on the angle bisector

Example 1

Find x , FB , and FD



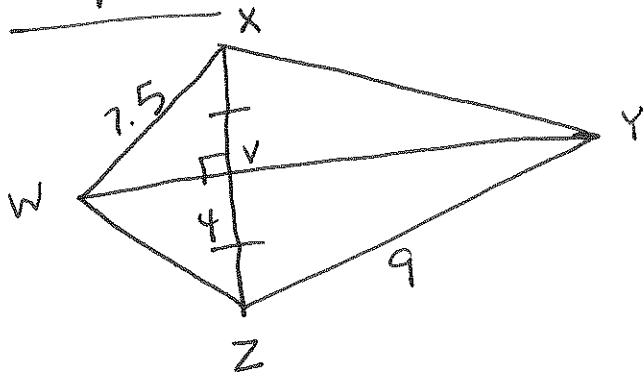
$$2x + 5 = 7x - 37$$

$$x = 8.4$$

$$FB = 21.8$$

$$FD = 21.8$$

Example 2



1. How is \overline{WY} related to \overline{XZ} ?
2. Find \overline{XV}
3. Find WZ .
4. Find XY
5. What kind of triangle is $\triangle WXV$?

1. \perp bisector
2. 4
3. 7.5
4. 9
5. right