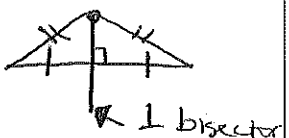
Cornell Notes

Main Ideas/Questions

Topic/ Objective: Cont'd Midsegments of Triangles (5-1) and Bisectors in Triangles(5-2)

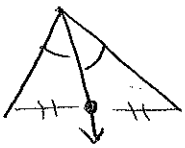


Theorem 5-2: Perpendicular Bisector Theorem

If a point is on the perpendicular bisector of a segment, then it is Equidistant from the endpoints of the segment

Theorem 5-3: Converse of the Perpendicular Bisector Theorem

If a point is equidistant from the endpoints of a segment, then it is It is a point on the perpendicular bisector of the segment



Theorem 5-4: Angle Bisector Theorem

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

Theorem 5-5: Converse of the Angle Bisector Theorem

If a point in the interior of an angle is equidistant from the sides of the angle, then it is On the angle bisector

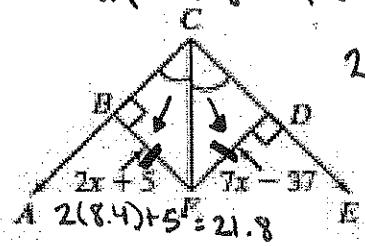
The distance from a point to a line is The length of the perpendicular segment from the point to the line

Example 1:

Using the Angle Bisector Theorem

Find x, FB, and FD in the diagram at right.

8.4 21.8 21.8



$2x+5=7x-37$

$-5 \quad -5$

$2x = 7x - 42$

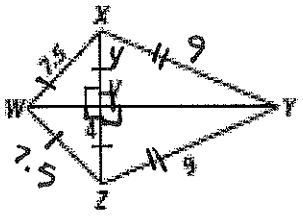
$-7x \quad -7x$

$\frac{-5x}{-5} = \frac{-42}{-5}$ $x = 8.4$

$2(8.4)+5 = 21.8$

Example 2: Perpendicular bisector

1. How is $\overline{WY}$ related to $\overline{XZ}$? ⊥ bisector
2. Find XV. 4
3. Find WZ. 7.5
4. Find XY. 9
5. What kind of triangle is $\triangle WXY$? Right D



Cornell Notes

Main Ideas/Questions

Name:_____
Class/Period:_____
Date:_____

Topic/ Objective: Midsegments of Triangles (5-1) and Bisectors in Triangles(5-2)

Theorem 5-1: Triangle Midsegment Theorem

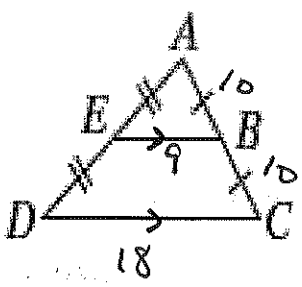
If a segment joins the midpoints of two sides of a triangle, then the segment is [Parallel] to the third side, and is [half] its length.

A midsegment of a triangle is A segment connecting the midpoints of two sides

A Coordinate proof is a form of proof in which coordinate geometry and algebra are used to prove a theorem.

Example:

1. $AB = 10$ and $CD = 18$. Find EB, BC, and AC.



Example: 2

$\overline{QR}$ is a midsegment of ΔLMN.

a. $QR = 9$. Find NM.

b. $LN = 12$ and $LM = 31$. Find the perimeter of ΔLMN.

61