

Cornell Notes

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Topic Geometry Triangles

Class/Subject Asbury Per 2

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midsegment

A segment connecting the midpoints of two sides

Theorem 5-1

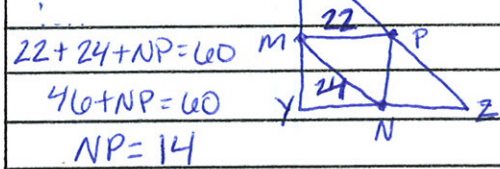
Triangle Midsegment Theorem
If a segment joins the midpoints of two sides of a triangle, then the segment is parallel to the third side, and half its length.

Coordinate Proof

Style of proof using coordinate geometry & algebra.

Example 1

In $\triangle XYZ$, M , N & P are midpoints. The perimeter of $\triangle MNP = 60$. Find NP and YZ .



$$22 + 24 + NP = 60$$

$$46 + NP = 60$$

$$NP = 14$$

$MP = \frac{1}{2} YZ$ Triangle Midsegment Theorem

$22 = \frac{1}{2} YZ$

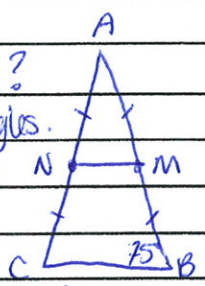
$44 = YZ$

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Example 2

Find $m\angle AMN$? and $m\angle ANM$?

$\angle AMN$ & $\angle B$ are corresponding angles.
 $MN \parallel BC$ by Triangle Midsegment Theorem $\Rightarrow \angle AMN \cong \angle B$ b/c parallel lines cut by a transversal form congruent angles



$m\angle AMN = 75^\circ$
 $m\angle ANM = 75^\circ$
 \nearrow
isosceles triangle

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HOMEWORK: Assignment #35 - p 262-263
(2-18 even, 22, 24, 30, 32, 34)

