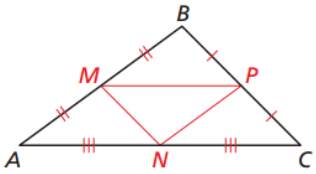
Geometry 6.4 Notes: Midsegments of Triangles

Midsegment of a Triangle: The midsegments of a triangle is a segment that connects the _____ of two sides of the triangle.

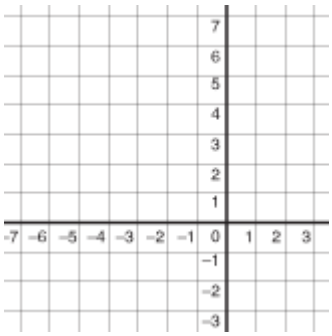
➔ EVERY triangle has _____ midsegments, which form a _____

**In the diagram…



Example:

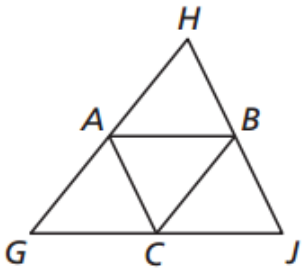
1. In ΔJKL, show that misegment $\overline{MN}$ is parallel to $\overline{JL}$ and that $MN = \frac{1}{2}JL$



Triangle Midsegment Theorem

The segment connecting the midpoints of two sides of a triangle is…

1. _____ to the third side
2. _____ as long as the third side



Examples:

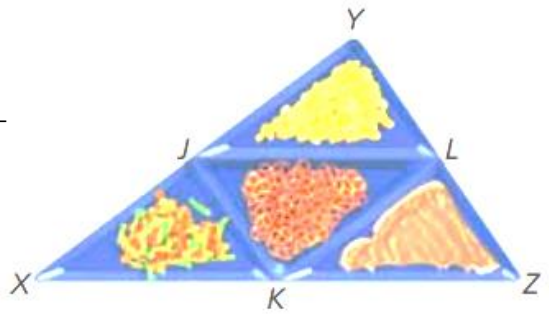
2. In the diagram, $\overline{XJ} \cong \overline{JY}$, $\overline{YL} \cong \overline{LZ}$, and $\overline{XK} \cong \overline{KZ}$. Complete each statement.

a. $\overline{JK} \parallel$ _____ b. $\overline{JL} \parallel$ _____

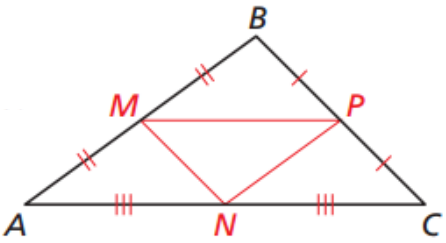
c. $\overline{XY} \parallel$ _____ d. $\overline{JY} \cong$ _____ $\cong$ _____

e. $\overline{JL} \cong$ _____ $\cong$ _____

f. $\overline{JK} \cong$ _____ $\cong$ _____



3. In the diagram, AB = 10.2, MP = 5.6, and $m\angle CNP = 29°$. Find…



a. NP = _____

b. AC = _____

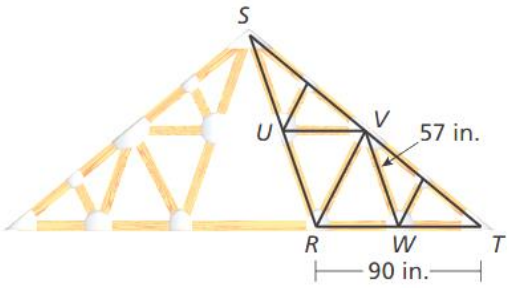
c. NC = _____

d. $m\angle MPN$ = _____

e. $m\angle BAC$ = _____

f. $m\angle AMP$ = _____

4. Triangles are used for strength in roof trusses.
In the diagram, $\overline{UV}$ and $\overline{VW}$ are midsegments of ΔRST. Find UV and RS.



5. Pear Street intersects Cherry Street and Peach Street at their midpoints. Your home is at point P. You leave your home and jog…
   a. down Cherry Street to Plum Street,
   b. over Plum Street to Peach Street,
   c. up Peach Street to Pear Street,
   d. over Pear Street to Cherry Street,
   e. then back home up Cherry Street.

Approximately how many miles did you jog? Round to the nearest whole mile.