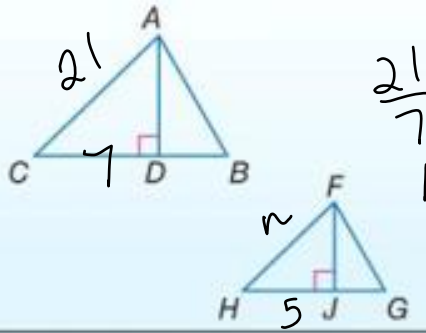
7.5 Parts of Similar Triangles

$\sim\Delta's$ have corresponding altitudes proportional to the corresponding sides.

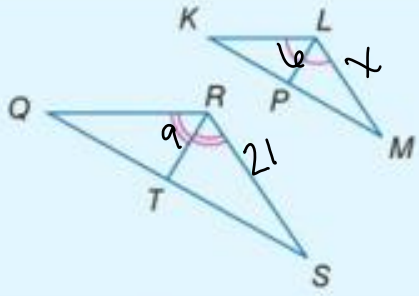


$\frac{21}{7} = \frac{n}{5}$

$105 = 7n$

$15 = n$

$\sim\Delta's$ have corresponding $\angle$bisectors proportional to the corresponding sides.

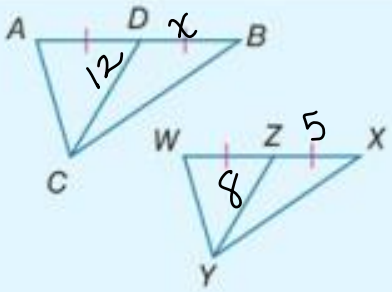


$\frac{6}{9} = \frac{x}{21}$

$9x = 126$

$x = 14$

$\sim\Delta's$ have corresponding medians proportional to the corresponding sides.



$\frac{12}{8} = \frac{x}{5}$

$60 = 8x$

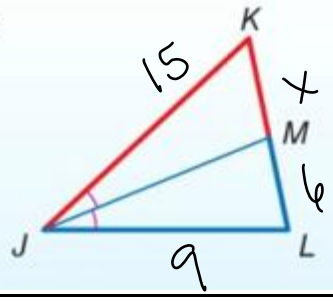
$7.5 = x$

Triangle Angle Bisector

An angle bisector in a triangle separates the opposite side into two segments that are proportional to the lengths of the other two sides.

Example If $\overline{JM}$ is an angle bisector of $\triangle JKL$,

then $\frac{KM}{LM} = \frac{KJ}{LJ}$ ← segments with vertex K / ← segments with vertex L



$\frac{x}{6} = \frac{15}{9}$

$9x = 90$

$x = 10$