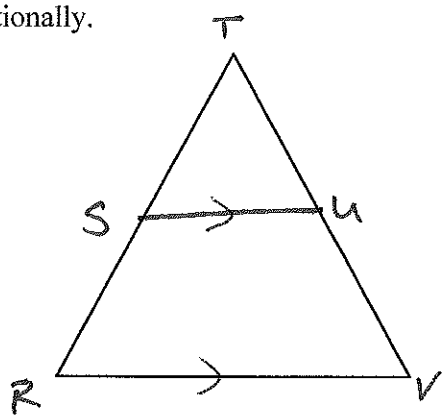
Cornell Notes	Name: KEY Date: _____
Main Ideas/Questions	Title of Notes: **7-5 Proportions in Triangles and Parallel Lines**

Side-Splitter Theorem:
If a line is parallel to one side of a triangle and intersects the other two sides then it divides those sides proportionally.

Ex. 1st label the triangles RTV
2nd draw SU // RV

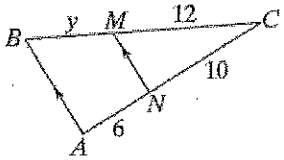
Complete the proportional parts



$\frac{RS}{ST} = \frac{UV}{UT}$ $\frac{RS}{UV} = \frac{ST}{UT}$

Practice Problems

❶ Using the Side-Splitter Theorem Find y.



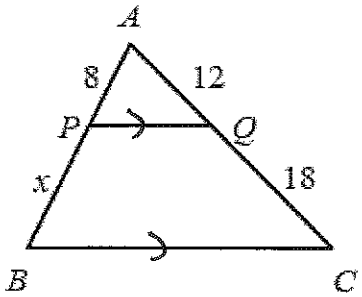
$\frac{CM}{MB} = \frac{CN}{NA}$ Side-Splitter Theorem

$\frac{12}{y} = \frac{10}{6}$ Substitute.

$10y = 72$ Cross-Product Property

$y = 7.2$ Solve for y.

2. Use the Side-Splitter Theorem to find x given that $\overline{PQ} \parallel \overline{BC}$.



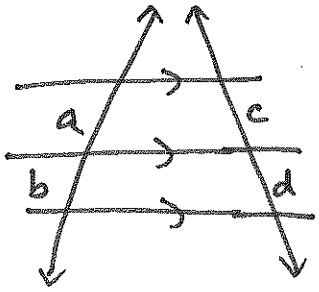
$\frac{8}{x} = \frac{12}{18}$

$x = 12$

Cornell Notes	Name:_____ Date: _____
Main Ideas/Questions	Title of Notes: **Cont'd**

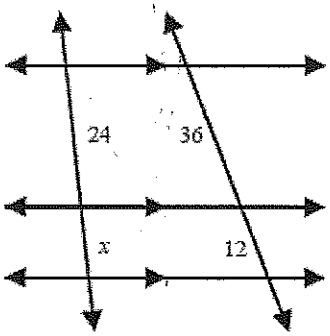
<u>Corollary to Side-Splitter Theorem</u>: If three parallel lines intersect two transversal, then the segments intercepted on the transversal are proportional. $\frac{a}{b} = \frac{c}{d}$

EX. Draw three lines parallel intersected by two transversal. Label the interior segments *a, b, c*, and *d*, so $\frac{a}{b} = \frac{c}{d}$



<u>Practice Problem</u>

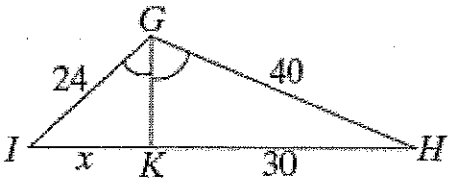
1. Solve for *x*.



$\frac{24}{x} = \frac{36}{12}$

$x = 8$

<u>Triangle-Angle-Bisector Theorem:</u>
If a ray bisects an angle of a triangle, then it divides the opposite side into two segments that are proportional to the other two side of a triangle.



$\frac{GI}{GH} = \frac{IK}{KH}$

Solve for x

$\frac{24}{40} = \frac{x}{30}$

$x = 18$