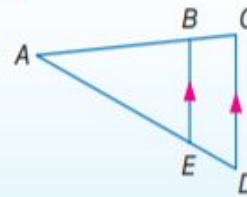


Theorem 7.5

Triangle Proportionality Theorem

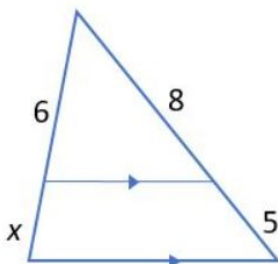
For Your
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If a line is parallel to one side of a triangle and intersects the other two sides, then it divides the sides into segments of proportional lengths.

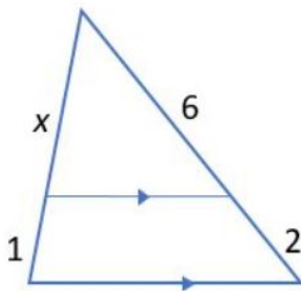


Example If $\overline{BE} \parallel \overline{CD}$, then $\frac{AB}{BC} = \frac{AE}{ED}$.

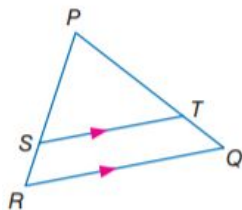
1. Find x :



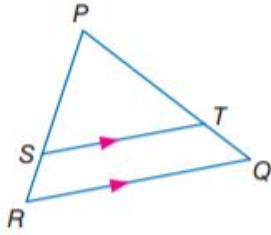
2. Find x :



3. In $\triangle PQR$, $\overline{ST} \parallel \overline{RQ}$. If $PT = 7.5$, $TQ = 3$, and $SR = 2.5$, find PS .



4. If $PS = 12.5$, $SR = 5$, and $PT = 15$, find TQ



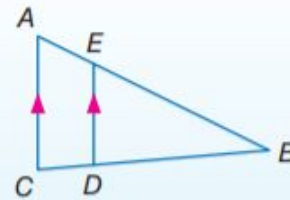
Theorem 7.6

For Your
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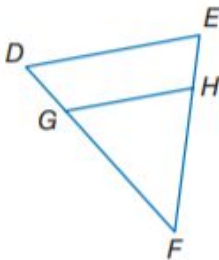
Converse of Triangle Proportionality Theorem

If a line intersects two sides of a triangle and separates the sides into proportional corresponding segments, then the line is parallel to the third side of the triangle.

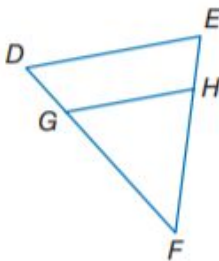
Example If $\frac{AE}{EB} = \frac{CD}{DB}$, then $\overline{AC} \parallel \overline{ED}$.



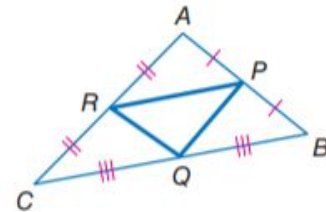
5. In $\triangle DEF$, $EH = 3$, $HF = 9$, and DG is one-third the length of \overline{GF} . Is $\overline{DE} \parallel \overline{GH}$?



6. DG is half the length of \overline{GF} , $EH = 6$, and $HF = 10$. Is $\overline{DE} \parallel \overline{GH}$?



Midsegment of a Triangle:

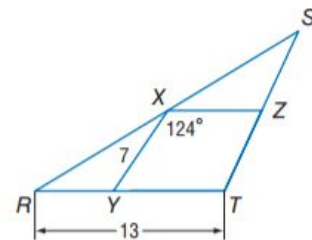


7. In the figure, \overline{XY} and \overline{XZ} are midsegments of $\triangle RST$. Find each measure.

a. XZ

b. ST

c. $m\angle RYX$



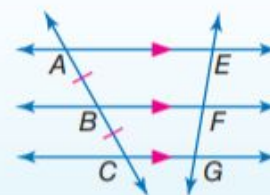
Corollary 7.2

For Your
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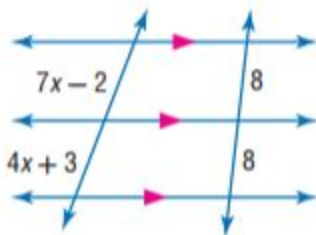
Congruent Parts of Parallel Lines

If three or more parallel lines cut off congruent segments on one transversal, then they cut off congruent segments on every transversal.

Example If $\overline{AE} \parallel \overline{BF} \parallel \overline{CG}$, and $\overline{AB} \cong \overline{BC}$, then $\overline{EF} \cong \overline{FG}$.

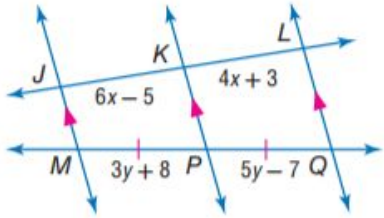


8. Find x



7.4 Parallel Lines and Proportional Parts
Geometry CC

9. Find x and y



10. Find x

