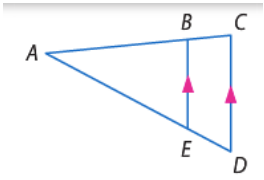
7 - 4

Parallel Line and Proportions

Triangle Proportionality Theorem

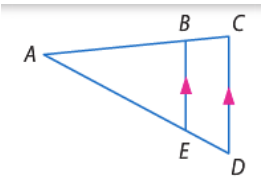
If a line is parallel to one side of a triangle, and intersects the other two sides, THEN the sides are now proportional segments

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



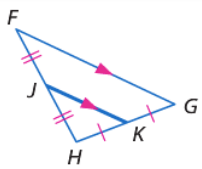
EXAMPLE (2 ways to solve):

AB = 5, BC = 3, AE = 8, find ED



TRIANGLE MIDSEGMENT THEOREM

A mid-segment of a triangle is parallel to one side of the triangle, and its length is ONE HALF the length of that side.



** Since J and K are midpoints AND JK is parallel to FG, JK is a mid-segment. The length of JK is equal to (1/2)FG.*

Solve for x. JH is a midsegment