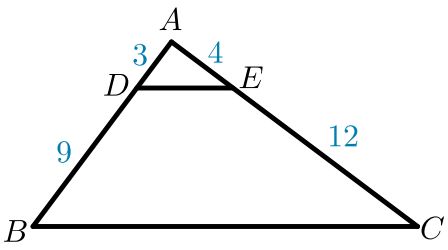
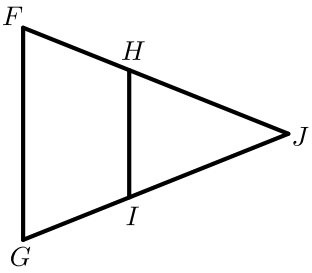
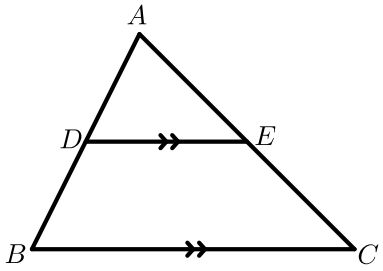
Converse of the Triangle Proportionality Theorem

Examples & Non-Examples

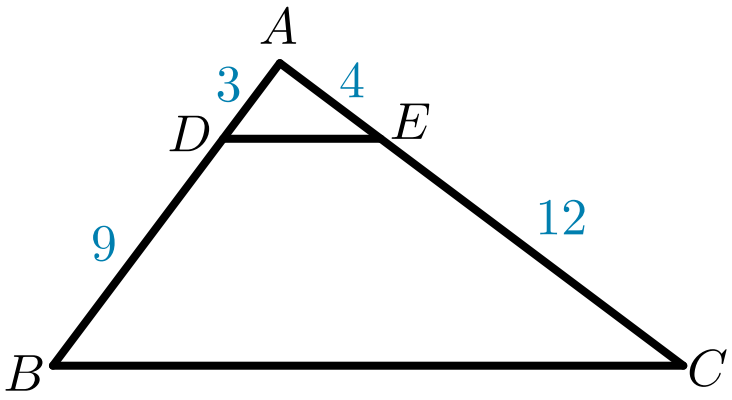
✔ Example	✔ Example	✖ Non-Example
		
If $\frac{AD}{DB} = \frac{AE}{EC}$, then $DE \parallel BC$	If $\frac{JH}{HF} = \frac{JI}{IG}$, then $HI \parallel FG$	If $DE \parallel BC$, then $\frac{AD}{DB} = \frac{AE}{EC}$

Definition

If a line intersects two sides of a triangle and divides those sides proportionally, then the line is parallel to the third side.

In other words, if the corresponding segments on two sides of a triangle have equal ratios, the line connecting those points must be parallel to the third side.

Example



If $\frac{AD}{DB} = \frac{AE}{EC}$, then $DE \| BC$.

Important

The original Triangle Proportionality Theorem starts with parallel lines and proves proportional segments. The converse starts with proportional segments and proves parallel lines.