4. Converse of Ceva's Theorem:—If, in △ ABC, on the three sides BC, CA, AB, or if on one of these sides and on the other two produced, points D, E, F respectively be taken so that AF . BD . CE = FB . DC . EA, the lines AD, BE, CF are concurrent.

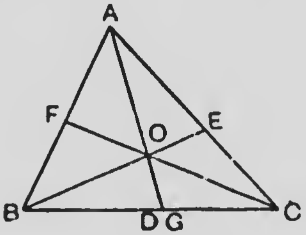

FIG. 7.

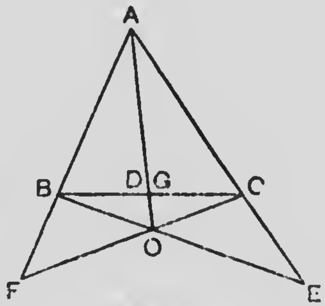

FIG. 8.

Draw BE, CF and let them cut at O. Join AO and let it cut BC at G.

∵ AG, BE, CF are concurrent,

∴ AF . BG . CE = FB . GC . EA, (§ 3.)

But AF . BD . CE FB . DC . EA, by hypothesis.

∴, dividing, $\frac{BG}{BD} = \frac{GC}{DC}$;

or, by alternation, $\frac{BG}{GC} = \frac{BD}{DC}$.

∴ G coincides with D.

∴ AD, BE, CF are concurrent.