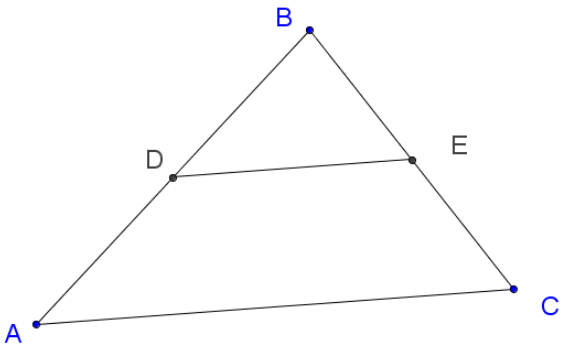
Side-Splitter Exploration

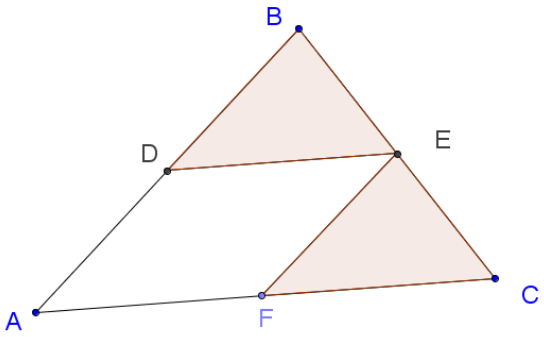
Given: AD = DB, DE // AC.

Prove: BE = EC



1. Prove it by using similar triangles (ABC and DBE). What properties of similar triangles are you using in your proof? Have we established (in this workshop) all the properties you used?

2. Prove it by making triangle FEC (how?) and show that it is congruent to triangle DBE.



3. Hon Fong will present a different proof.

4. Discuss the different proofs. What are the advantages and disadvantages of each? In what sense are they different. How does problem 1 differ from the `side-splitter theorem?

4. Does this work if D divides AB in a 1:2 ratio? What about a 1:3 ratio? A 1:n ratio? An m:n ratio?