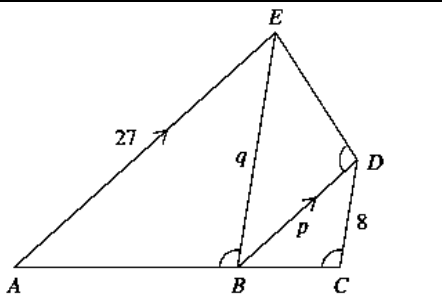
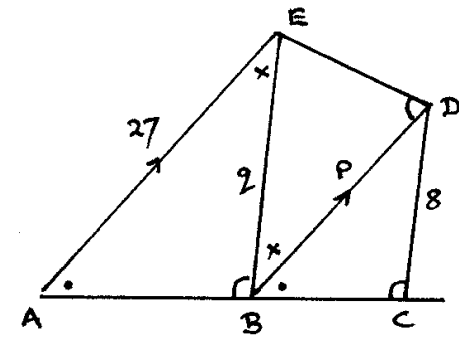


07	8b	<p>In the diagram, AE is parallel to BD, $AE = 27$, $CD = 8$, $BD = p$, $BE = q$ and $\angle ABE$, $\angle BCD$ and $\angle BDE$ are equal. Copy or trace this diagram into your writing booklet.</p> <p>(i) Prove that $\triangle ABE \sim \triangle BCD$.</p> <p>(ii) Prove that $\triangle EDB \sim \triangle BCD$.</p>	 <p>(Not to scale)</p>	2 2
i.		<p>In $\triangle ABE$ and BCD, $\angle EAB = \angle DBC$ (corr \angles, $AE \parallel BD$) $\angle ABE = \angle BDE$ (given) $\therefore \triangle ABE \sim \triangle BCD$ (2 \angles equal)</p>		
ii.		<p>In $\triangle ABE$ and EDB, $\angle AEB = \angle EBD$ (alt \angles, $AE \parallel BD$) $\angle ABE = \angle BDE$ (given) $\therefore \triangle ABE \sim \triangle EDB$ (2 \angles equal)</p> <p>But $\triangle ABE \sim \triangle BCD$ (from i) $\therefore \triangle EDB \sim \triangle BCD$</p>		

* These solutions have been provided by *projectmaths* and are not supplied or endorsed by the Board of Studies

Board of Studies: Notes from the Marking Centre

In this part, candidates were instructed to copy the diagram into their writing booklet.

Candidates who did not do this were more prone to making errors in naming the angles and triangles to which they were referring. Candidates could even consider copying the diagram to the back of a page so that it is visible while doing all parts of the question.

(i) Common errors included:

- Not recognising that the symbol \sim means 'is similar to'. Many candidates interpreted the symbol as 'is congruent to' and tried to prove the triangles congruent.
- Not accompanying each step in the proof with an associated justification.
- Not being careful in identifying the angles, or triangles, to which they were referring. For example, writing $\angle BBC$ instead of $\angle DBC$.
- Introducing pronumerals without stating what they referred to.

(ii) The proof required in this part involved more steps than that in part (i). While there were many ways in which to proceed in this part, better responses used the result from part (i). In addition to the errors that were common in the previous part, in this part an additional common error was to jump two or three steps in the proof while only giving a justification for one of those steps. For example, saying that $\angle EBD = \angle BDC$ as these are alternate angles on the parallel lines BE and CD but not proving that the lines BE and CD are indeed parallel.

Source: http://www.boardofstudies.nsw.edu.au/hsc_exams/