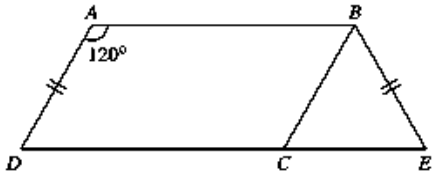
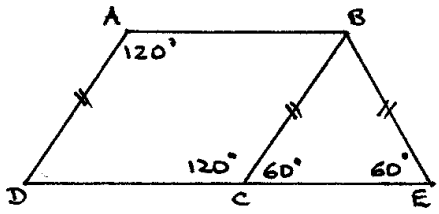
05	**5b**	The diagram shows a parallelogram *ABCD* with $\angle DAB = 120°$. The side *DC* is produced to *E* so that *AD* = *BE*. Copy or trace the diagram into your writing booklet. Prove that Δ *BCE* is equilateral. 	**3**

$\angle BCD = 120^\circ$ (opp $\angle$s of parallelogram)
$\therefore \angle BCE = 60^\circ$ (straight $\angle$)
Also, *AD* = *BC* (opp sides of parallelogram)
and *AD* = *BE* (given)
$\therefore$ *BC* = *BE*
$\therefore$ Δ*BCE* is isosceles

But $\angle BCE = \angle BCE = \angle BCE$ (all 60°)
$\therefore$ Δ *BCE* is equilateral.



* 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

Most candidates attempted this question with some measure of success. Candidates are reminded, however, that a proof is much more than a list of relevant facts, and construction of a logical and well supported argument is required. Common errors included the misnaming of angles, use of ambiguous statements and the presentation of unsupported claims.

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