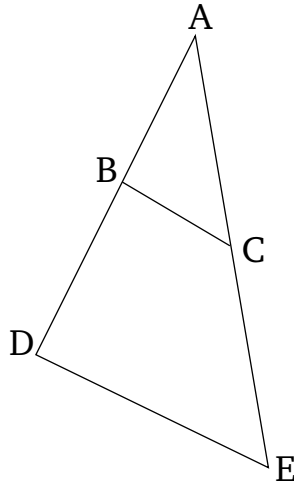# Book 6
Proposition 11

To find a third (straight-line) proportional to two given straight-lines.

Let BA and AC be the [two] given [straight-lines], and let them be laid down encompassing a random angle. So it is required to find a third (straight-line) proportional to BA and AC. For let (BA and AC) have been produced to points D and E (respectively), and let BD be made equal to AC [Prop. 1.3]. And let BC have been joined. And let DE have been drawn through (point) D parallel to it [Prop. 1.31].

Therefore, since BC has been drawn parallel to one of the sides DE of triangle ADE, proportionally, as AB is to BD, so AC (is) to CE [Prop. 6.2]. And BD (is) equal to AC. Thus, as AB is to AC, so AC (is) to CE.

Thus, a third (straight-line), CE, has been found (which is) proportional to the two given straight-lines, AB and AC. (Which is) the very thing it was required to do.