

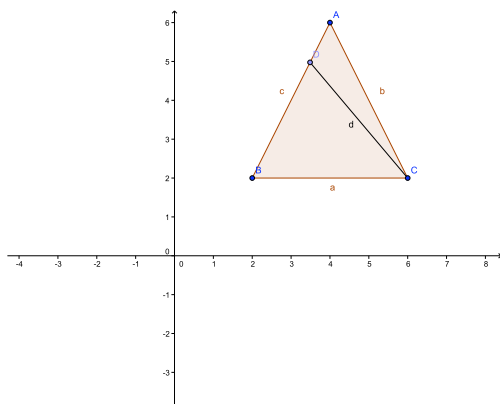
MT 453 Elements Day 4

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Scribes: Sarah, Andrew

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Proposition I.6

Converse to I.5



Let ABC be a triangle with $\angle ABC = \angle ACB$.
And we assume $AB \neq AC$.

Choose D on AB such that $DB = AC$. (Prop. I.3)

Connect D to C . (C.N.2)

We see that $DB = AC$ and the triangles share a base BC .

Then $\angle DBC = \angle ACB$

And so $\triangle DBC = \triangle ABC$.

But a whole is greater than a part.

Therefore, the assumption that $AB \neq AC$ is false.

Q.E.F.

Comments: 1. We chose D to be on AB , but you can choose a point on whichever line you choose to be the greater one.