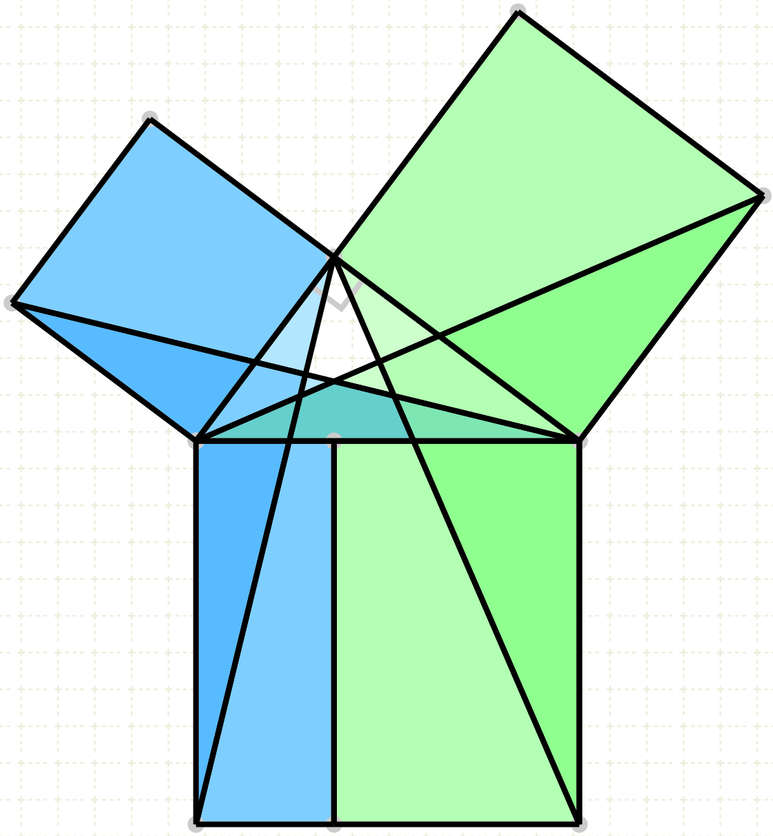
Euclid's Elements

Book I



If Euclid did not kindle your youthful enthusiasm, you were not born to be a scientific thinker.

Albert Einstein

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Proposition 39 of Book I

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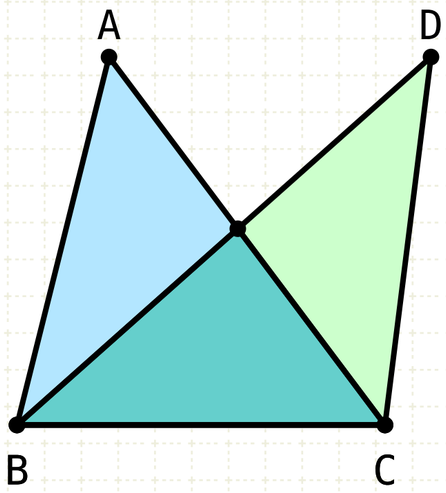


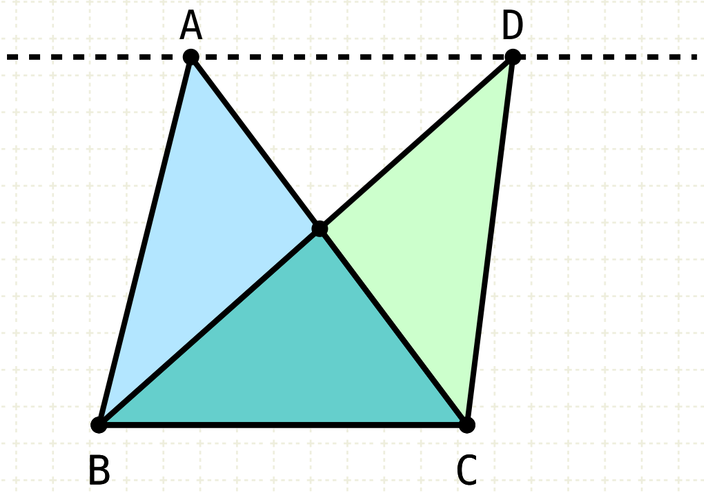
$\Delta ABC = \Delta DBC$

In other words

Let ABC and DBC be triangles with the same base, and equal area

Proposition 39 of Book I

Equal triangles which are on the same base and on the same side are also in the same parallels.



$\Delta ABC = \Delta DBC$

$AD \parallel BC$

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The lines AD and BC are parallel

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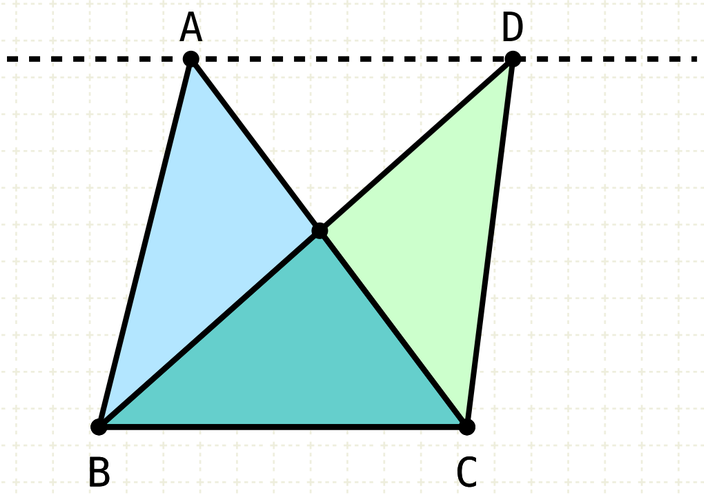

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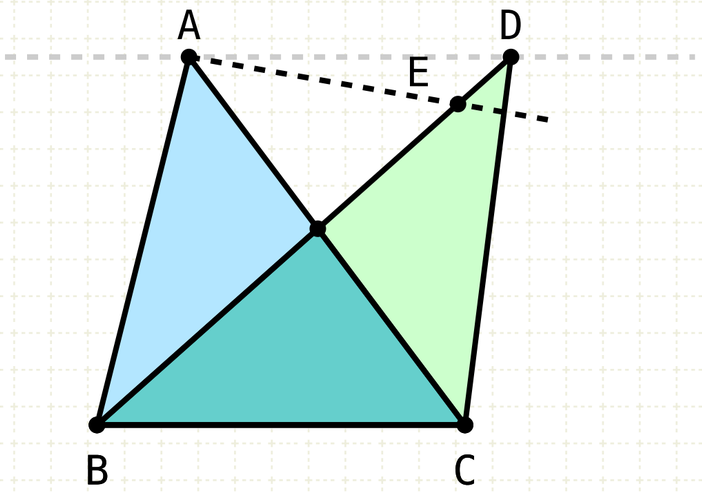

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Proof by Contradiction

Assume AD is not parallel to BC

Draw line AE, parallel to BC and passing point A and line DB

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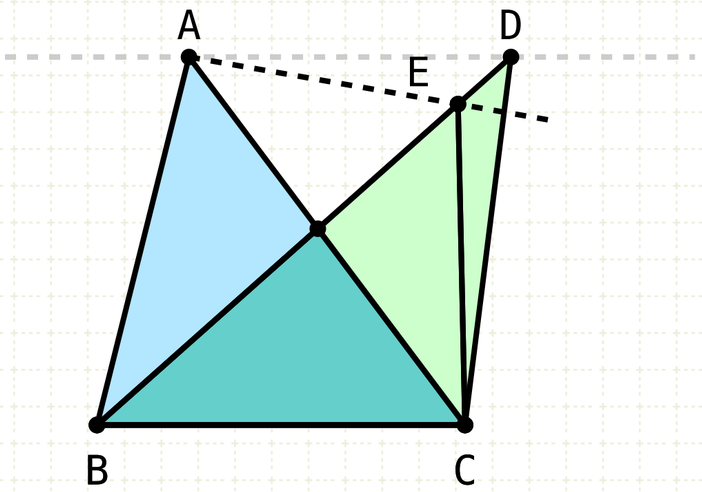

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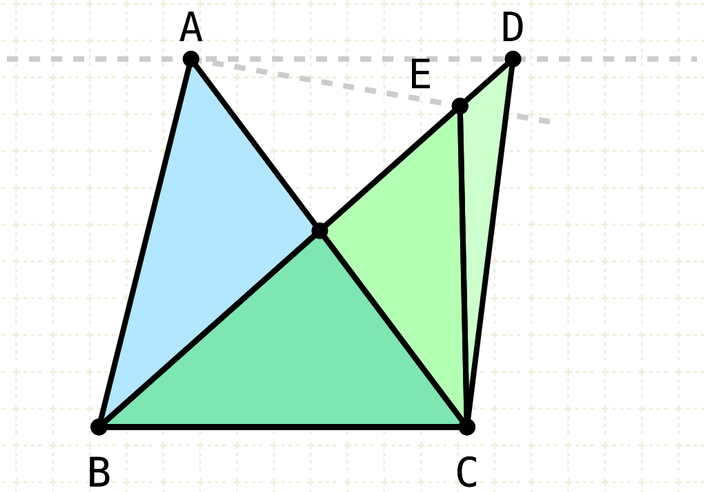

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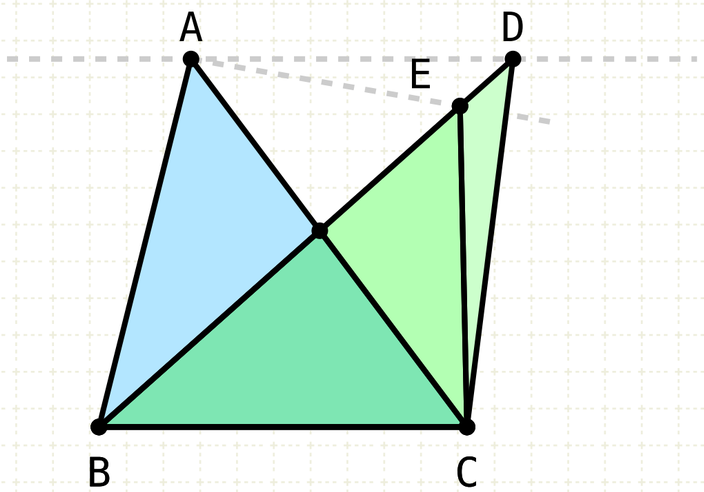

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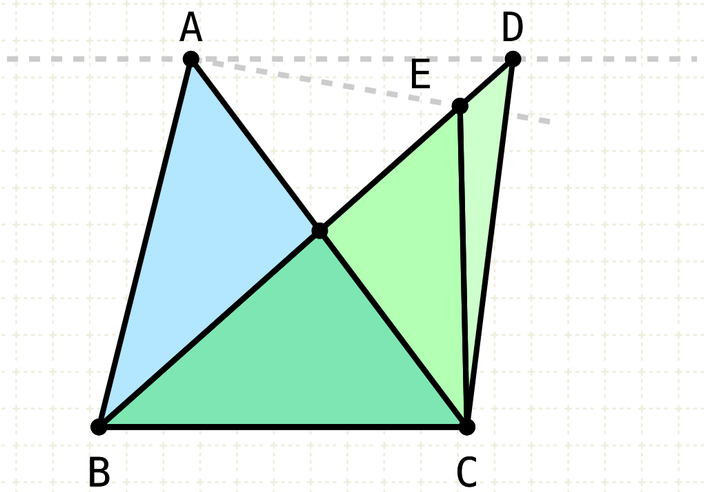

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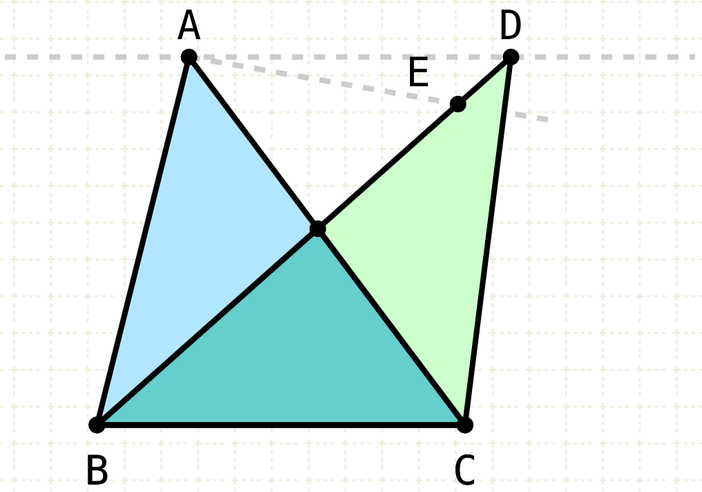

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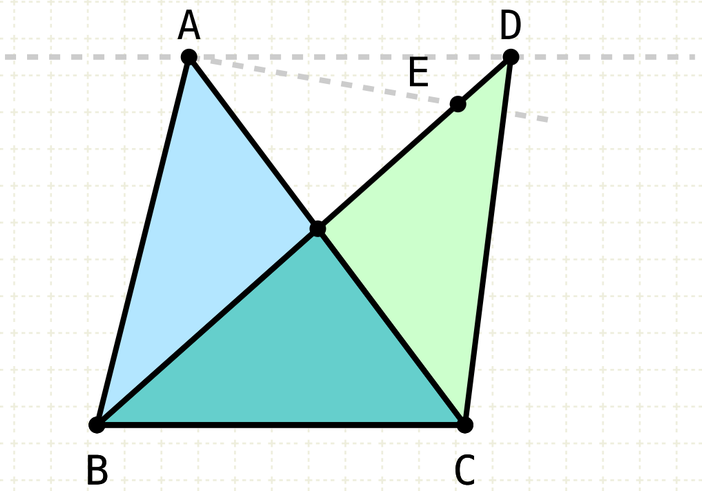

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