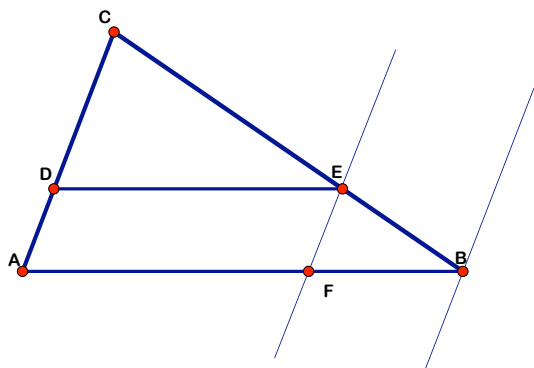


Theorem 37. Let $\triangle ABC$ and points D and E as in the Theorem 36. Then if $DE \parallel AB$, then $IDCI/|ACI|=|IDEI/|ABI$.



Proof:

- | | |
|------------------------------------|---|
| 1. Draw a line $EF \parallel AC$. | 1. By Axiom 5.1 it is possible. |
| 2. $ EBI/ ICEI = ADI/ DCI$ | 2. Theorem 36 a) |
| 3. $ FBI/ AFI = EBI/ ICEI$ | 3. Theorem 36 a) |
| 4. $ FBI/ AFI = ADI/ DCI$ | 4. 3 and 2 |
| 5. ADEF is a parallelogram. | 5. $AD \parallel EF$ and $DE \parallel AF$. |
| 6. $ IDEI = AFI$ | 6. Opposite sides of a parallelogram are equal. |
6. $|ABI/|IDEI| = \frac{|AFI|+|FBI|}{|IDEI|} = \frac{|IDEI|+|FBI|}{|IDEI|} = 1 + \frac{|FBI|}{|IDEI|} = 1 + \frac{|FBI|}{|AFI|} = 1 + \frac{|ADI|}{|DCI|} = \frac{|DCI|+|ADI|}{|DCI|} = \frac{|ACI|}{|DCI|}$

Theorem 38. Let $\triangle ABC$ and points D and E as in the Theorem 36. Then if $IDCI/|ACI|=|IDEI/|ABI$, then $DE \parallel AB$.