

# Solutions IMO 2006

Samuel de Araújo Brandão

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This document contains solutions to the IMO 2006 problems, written by me during my preparation for the International Mathematical Olympiad.

The content reflects my own understanding and problem-solving process. Some solutions may have been inspired by the work of others or required external help, in which case proper attribution is given (see [section 3](#)).

If you notice any errors or have suggestions for improvement, I would greatly appreciate hearing from you at [samuelbaraujo19@gmail.com](mailto:samuelbaraujo19@gmail.com).

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## 1 Problems

1. Let  $ABC$  be triangle with incenter  $I$ . A point  $P$  in the interior of the triangle satisfies

$$\angle PBA + \angle PCA = \angle PBC + \angle PCB.$$

Show that  $AP \geq AI$ , and that equality holds if and only if  $P = I$ .

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## 2 Solutions

### 2.1 Problem 1

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### 3 Refereneces