Friday, March 01, 2013

A plane flies from point A to B and back with constant engine speed. Compare the travel time between the case of still air and of the case in which the wind flows with constant speed (say in the direction from A to B). You may neglect the turning time of the plane.

Solution. Let us use the following notations $d$ - the distance between A and B, $v$ - the speed of the engine and $u$ - the speed of the wind. The time for the round trip in still air is

$\frac{2d}{v}$.

The time in the windy situation is equal to

$\frac{d}{v + u} + \frac{d}{v - u} = \frac{2d}{v} \frac{v^2}{v^2 - u^2} > \frac{2d}{v}$.

Good Luck! Have fun and enjoy Mathematics!