Macintosh HD:Users:Eva:Downloads:CodeCogsEqn.gif

First part is potential velocity of panels, and second part is potential of free stream. The result should be constant. Here we can choose the constant as zero as a specific solution.

Macintosh HD:Users:Eva:Downloads:CodeCogsEqn-2.gif

Using the principle of superposition, the velocity potential becomes:

Macintosh HD:Users:Eva:Downloads:CodeCogsEqn-3.gif

Macintosh HD:Users:Eva:Downloads:CodeCogsEqn-5.gif

Using Dirichlet boundary condition

Macintosh HD:Users:Eva:Downloads:CodeCogsEqn-7.gif

i.e.

Macintosh HD:Users:Eva:Downloads:CodeCogsEqn-9.gif