

Problem 132A

Show that the following expression for the velocity potential of the irrotational, planar flow (in the xy plane) of an incompressible fluid does indeed satisfy Laplace's equation:

$$\phi = \operatorname{Re}\{f(z)\}$$

where Re stands for "real part of" and $f(z)$ is any analytic function of the complex quantity, $z = x + iy$.