

F14.  $\phi_1(x, y)$  and  $\phi_2(x, y)$  are known to be physically-possible flows (i.e. satisfy mass conservation), and their corresponding pressure fields  $p_1(x, y)$  and  $p_2(x, y)$  are known via the Bernoulli equation.

- a) A third flow is now defined by  $\phi_3(x, y) = \phi_1 + \phi_2$ . Explain how you would obtain its corresponding pressure field  $p_3$ .
- b) Yet another flow  $\phi_4 = \partial\phi_1/\partial x$  is defined. Is this a physically-possible flow?