

Problem 17

Assume that Eq. (6) meets the requirements of Theorem 2.6.1 in a rectangle R and is therefore exact. Show that a possible function $\psi(x, y)$ is

$$\psi(x, y) = \int_{x_0}^x M(s, y_0) ds + \int_{y_0}^y N(x, t) dt,$$

where (x_0, y_0) is a point in R .