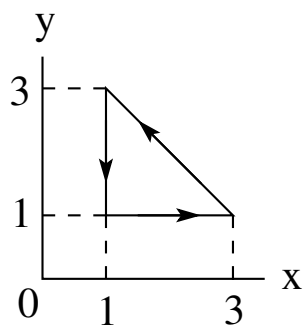


[tex5] Exact and inexact differentials I

(a) Show that the differential  $dF_1 = xydx + x^2dy$  is inexact. Determine the value of the integral  $\oint dF_1$  along the closed path shown.

(b) Show that  $dF_2 = (2y^2 - 3x)dx + 4xydy$  is an exact differential. Determine the function  $F_2(x, y)$ .



Solution: