CAPÍTULO 4 SOLUÇÕES DOS PROBLEMAS

4.1 $v_y = -kz^2y + C(x,z)$

4.2 Satisfaz

4.3 $v_\theta = b\ \text{sen}\theta/r^2 + C(r)$

4.4 $\rho\ (x) = \rho_0\ /(1 + x/L);\ x = L/9$

4.5 $D_e/D_0 > 0{,}313$; b) $D_e/D_0 > 0{,}542$

4.6 $\partial P/\partial x = -24\rho$

$(\nabla P = -\rho(8\vec{i} + 16\vec{j}))$

4.7 $C = \rho g\ \text{sen}\theta/2\mu$

$Q = \rho g\ \text{sen}\theta h^3/3\mu$ por unidade de largura

4.8 $Q_2 = 16\ Q_1$

4.9 37,34 N m^{-2}; 12,45 N m^{-2}

4.10 2,1 in

4.11 10,67 N m^{-2}

4.12 $-dP/dx = 2\mu V_0/h^2$

4.13 516 mm

4.14 5,15 x10^{-3} kg s m^{-2}

4.15 88,7 m

4.16 4 x 10^{-2} m^3 s^{-1}

4.17 180 mm

4.19 $v_y = 1/2\mu\ (\rho g + dP/dy)\ (x^2 - Lx) + v_0x/L$

4.21 $v_x = \partial\psi/\partial y = ax^2 - ay^2$

$v_y = -\partial\psi/\partial x = -2axy$

4.21 continuação

$\psi = a(x^2y - y^3/3) + C$; com C = 0