

姓名：_____ 學號：_____ 系級：_____

Problem: An infinitely long rectangular metal pipe (sides a and b) is grounded, but one end, at $x = 0$, is maintained at a specified potential $V_0(y,z)$, as indicated in Figure.

- Show the Laplace's equation (using the method of separation of variables) (15 %);
- Write down the boundary conditions of x , y and z (25 %);
- Develop a general formula for the potential within the pipe (20 %);
- Find the coefficient, for the case, $V_0(y,z) = V_0$ (a constant) (20%)
- Write down the total expression of $V(x, y, z)$ (20%)

