2-1 a, b

 Consider the heat equation for a rectangular region, 0 < x < a, 0 < y < b, t > 0

ut = k(uxx + uyy) , 0 < x < a, 0 < y < b, t > 0

subject to the initial conditions: u(x,y) = f(x,y)

1. ux (0, y, t) = 0, ux (a, y, t) = 0, 0 < y < b, t > 0

 uy (x, 0, t) = 0, uy (x, b, t) = 0, 0 < x < a, t > 0

1. u (0, y, t) = 0, ux (a, y, t) = 0, 0 < y < b, t > 0

 uy (x, 0, t) = 0, uy (x, b, t) = 0, 0 < x < a, t > 0