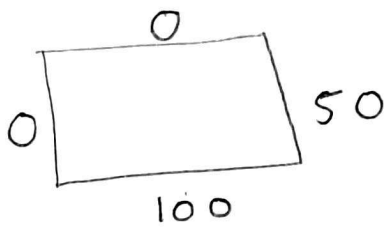
1.b) BC

$u(0,y) = 0$

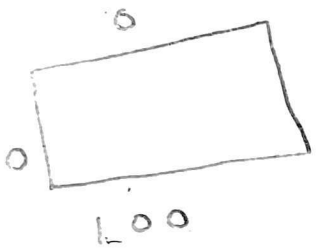
$u(a,y) = 50$

$u(x,0) = 100$

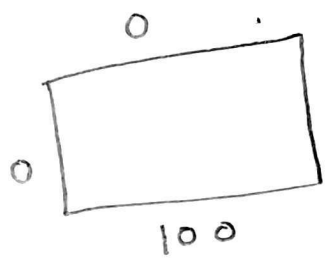
$u(x,b) = 0$



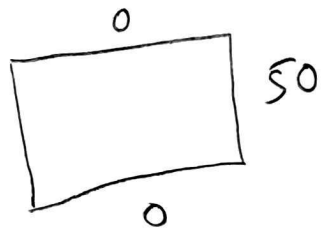
Since



$=$



$+$



Let the solution $u(x,y)$ to $\frac{d^2u}{dx^2} + \frac{d^2u}{dy^2}$ be equal to:

$u(x,y) = u_1(x,y) + u_2(x,y)$ where:

BC for $u_1(x,y)$:

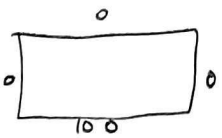
$u(0,y) = 0$

$u(x,b) = 0$

$u(a,y) = 0$

$u(x,0) = 100$

i.e.



BC for $u_2(x,y)$:

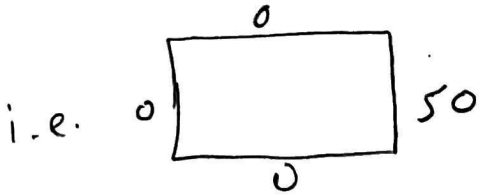
$u(0,y) = 0$

$u(x,b) = 0$

$u(a,y) = 50$

$u(x,0) = 0$

i.e.



Maple ↓