Let €:= {(*x,y)* : 0 < *x* < 1, 0 *< y* < 1}.

(1) Let *u(x,y)* satisfy the PDE

 *uxx* + *uyy =* 0*,*

 *u*(0, *y*) = 0, *u*(1, *y*) = 0, 0 < *y <* 1;

 *u*(*x*, 0) = 0, *u*(*x*,1) = *f*(*x*), 0 < *x <*1.

(2) If *f(x) = x,* 0 *< x <* ½; and *f*(*x*) = ½, ½ < *x <*1; then what does *u(x,y)* from problem (1) look like?