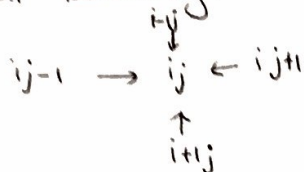


Six unique nodes:

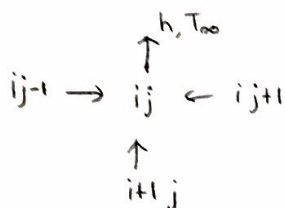
internal boundary:



$$k(\Delta x) \frac{T_{i,j-1} - T_{ij}}{\Delta y} + k(\Delta x) \frac{T_{i,j+1} - T_{ij}}{\Delta y} + k(\Delta y) \frac{T_{i-1,j} - T_{ij}}{\Delta x} + k(\Delta y) \frac{T_{i+1,j} - T_{ij}}{\Delta x} = 0$$

$$(\Delta x / \Delta y) T_{i,j-1} + (\Delta x / \Delta y) T_{i,j+1} + (\Delta y / \Delta x) T_{i-1,j} + (\Delta y / \Delta x) T_{i+1,j} - (2) \left( \frac{\Delta x}{\Delta y} + \frac{\Delta y}{\Delta x} \right) T_{ij} = 0 \quad \#$$

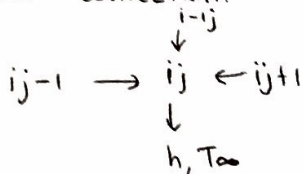
Top convection:



$$k(\Delta y/2) \frac{T_{i,j-1} - T_{ij}}{\Delta x} + k(\Delta y/2) \frac{T_{i,j+1} - T_{ij}}{\Delta x} + k(\Delta x) \frac{T_{i+1,j} - T_{ij}}{\Delta y} + h\Delta x(T_{\infty} - T_{ij}) = 0$$

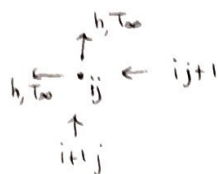
$$(0.5)(\Delta y / \Delta x) T_{i,j-1} + (0.5)(\Delta y / \Delta x) T_{i,j+1} + (\Delta x / \Delta y) T_{i+1,j} - \left( \frac{\Delta y}{\Delta x} + \frac{\Delta x}{\Delta y} + \frac{h\Delta x}{k} \right) T_{ij} = -\frac{h\Delta x}{k} T_{\infty} \quad \#$$

Bottom convection:



$$(0.5)(\Delta y / \Delta x) T_{i,j-1} + (0.5)(\Delta y / \Delta x) T_{i,j+1} + (\Delta x / \Delta y) T_{i-1,j} - \left( \frac{\Delta y}{\Delta x} + \frac{\Delta x}{\Delta y} + \frac{h\Delta x}{k} \right) T_{ij} = -\frac{h\Delta x}{k} T_{\infty} \quad \#$$

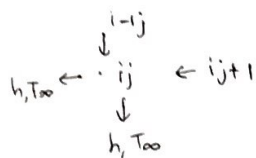
Top left corner:



$$k \left( \frac{\Delta x}{2} \right) \frac{T_{i+1,j} - T_{ij}}{\Delta y} + k \left( \frac{\Delta y}{2} \right) \frac{T_{ij+1} - T_{ij}}{\Delta x} + h \left( \frac{\Delta x}{2} \right) (T_{\infty} - T_{ij}) + h \left( \frac{\Delta y}{2} \right) (T_{\infty} - T_{ij}) = 0$$

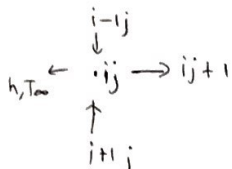
$$(\Delta x / \Delta y) T_{i+1,j} + (\Delta y / \Delta x) T_{ij+1} - \left( \frac{\Delta x}{\Delta y} + \frac{\Delta y}{\Delta x} + \frac{h \Delta x}{k} + \frac{h \Delta y}{k} \right) T_{ij} = - \left( \frac{h \Delta x}{k} + \frac{h \Delta y}{k} \right) T_{\infty} \quad *$$

Bottom left corner:



$$(\Delta x / \Delta y) T_{i-1,j} + (\Delta y / \Delta x) T_{ij+1} - \left( \frac{\Delta x}{\Delta y} + \frac{\Delta y}{\Delta x} + \frac{h \Delta x}{k} + \frac{h \Delta y}{k} \right) T_{ij} = - \left( \frac{h \Delta x}{k} + \frac{h \Delta y}{k} \right) T_{\infty} \quad *$$

Center of left edge:



$$k (\Delta x / 2) \frac{T_{i-1,j} - T_{ij}}{\Delta y} + k (\Delta x / 2) \frac{T_{i+1,j} - T_{ij}}{\Delta y} + k (\Delta y) \frac{T_{ij+1} - T_{ij}}{\Delta x} + h (\Delta y) (T_{\infty} - T_{ij}) = 0$$

$$(0.5) (\Delta x / \Delta y) T_{i-1,j} + (0.5) (\Delta x / \Delta y) T_{i+1,j} + (\Delta y / \Delta x) T_{ij+1} - \left( \frac{\Delta x}{\Delta y} + \frac{\Delta y}{\Delta x} + \frac{h \Delta y}{k} \right) T_{ij} = \frac{h \Delta y}{k} T_{\infty}$$