Problem 2

Solve the following heat transfer problem with appropriate boundary conditions

$$\frac{\partial T}{\partial y} = 0$$

Temperature 500 K   Temperature 1000 K

$$\frac{\partial T}{\partial y} = 0$$
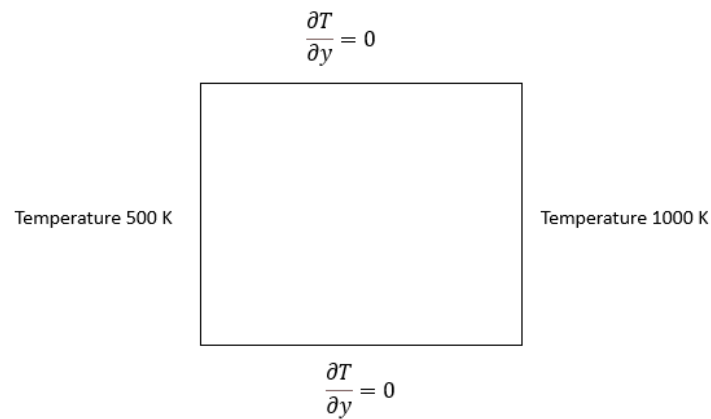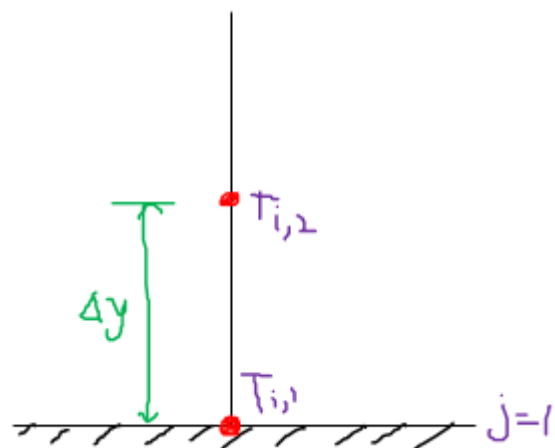
Left wall

T = 500K

Right wall

T = 1000K

Bottom Wall

$$\frac{\partial T}{\partial y} = 0$$

Apply forward difference approximation

$$\frac{T_{i,2} - T_{i,1}}{\Delta y} = 0$$

$$T_{i,1} = T_{i,2}$$

Top wall

$$\frac{\partial T}{\partial y} = 0$$

Apply backward difference approximation

$$\frac{T_{i,n-1} - T_{i,n}}{\Delta y} = 0$$

$$T_{i,n} = T_{i,n-1}$$