So that the discretized coefficients are:

Equation 6: Discretization coefficients for the four materials problem

### Boundary conditions

The outer walls of the rod have special conditions, so each of them has to be studied in order to determine the coefficients of the boundary nodes.

In the left wall (), there is convection, so the coefficients have to be recalculated:

The only coefficients that change are:

Equation 7: Discretization coefficients of the left wall

In the top wall () there is a constant heat flux, so that the new equation is:

The new coefficients are:

Equation 8: Discretization coefficients of the top wall

In the right wall (), the temperature is given, and it changes over time. The conduction equation becomes:

The coefficients are very similar to those of the general case. The only differences are:

Equation 9: Discretization coefficients of the right wall

Finally, in the bottom () the temperature is also given, but it is constant. The approach is very similar to that of the right wall.

So that the coefficients are:

Equation 10: Discretization coefficients of the bottom wall