

```

> restart; with(plots) :
> heat1 := (x, t) → diff(u(x, t), t) = a·diff(u(x, t), x, x) + b;
> uic := x; n := 10; steps := 800; tau :=  $\frac{1}{steps}$ ; h := 1/n; s := array(0..n, 0..steps);

> for j from 1 to n - 1 do
  for m from 0 to steps - 1 do
    x := j·h;
    t := m·tau;
    a := x + t;
    b := x - t;

s[j, 0] := uic;

s[0, m + 1] :=  $\frac{a \cdot \tau}{h^2} \cdot (2 \cdot s[1, m] - 2 \cdot s[0, m]) + b \cdot \tau + s[0, m]$ ;
s[n, m + 1] :=  $\frac{a \cdot \tau}{h^2} \cdot (2 \cdot s[j + 1, m] - 2 \cdot s[j, m]) + b \cdot \tau + s[j, m]$ ;

  end do:
end do:

for m from 0 to steps - 1 do
  for j from 1 to n - 1 do
    x := j·h;
    t := m·tau;
    a := x + t;
    b := x - t;
    s[j, m + 1] := s[j, m] + tau·(a·(s[j-1, m] - 2·s[j, m] + s[j + 1, m]) / h
^2 + b);
  end do:
end do:

resplot := [seq( listplot( [seq( s[j, m], j=0..n) ] ), m=1..steps)]:
display(resplot, insequence=false); display(resplot, insequence=true, color=red);

Error, (in plots:-pointplot) number of elements in list must be
a multiple of 2
Error, (in plots:-display) expecting plot structure but
received: resplot
Error, (in plots:-display) expecting plot structure but
received: resplot
>
>

```