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[ > # Section 2.6 Problem 3 part a
[ > restart;
[ > f:=(x,y)->y;
                                f:=(x,y)→y
[ > x[0]:=0;
  y[0]:=1;
                                x0:=0
                                y0:=1
[ > n:=10;
  h:=1.0/n;
                                n:=10
                                h:=0.1000000000
[ > for i from 0 to n-1 do
  x[i+1]:=x[0]+h*(i+1);
  y[i+1]:=y[i]+h*f(x[i],y[i]);
od:
[ > yc:=x->exp(x);
                                yc:=exp
[ > matrix([seq([x[i],y[i],yc(x[i]),
  abs(y[i]-yc(x[i])),
  100*abs((y[i]-yc(x[i]))/yc(x[i]))],i=0..n)]);
                                [
                                0          1          1          0          0
0.1000000000  1.1000000000  1.105170918  0.005170918  0.4678840092
0.2000000000  1.2100000000  1.221402758  0.011402758  0.9335788646
0.3000000000  1.3310000000  1.349858808  0.018858808  1.397094858
0.4000000000  1.4641000000  1.491824698  0.027724698  1.858442084
0.5000000000  1.6105100000  1.648721271  0.038211271  2.317630740
0.6000000000  1.7715610000  1.822118800  0.050557800  2.774670894
0.7000000000  1.9487171000  2.013752707  0.065035607  3.229572667
0.8000000000  2.1435888100  2.225540928  0.081952118  3.682346030
0.9000000000  2.3579476910  2.459603111  0.101655420  4.133000952
1.0000000000  2.5937424600  2.718281828  0.124539368  4.581547311
[ >

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