The cosine function

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The cosine function can be defined through the differential equation

$$y''(x) = -y(x) \tag{1}$$

with the boundary conditions

$$y(0) = 1 \quad y'(0) = 0. \tag{2}$$

The result was obtained using ode.rk23, a Runge-Kutta ODE-solver provided by D.V.Fedorov.

Cosine function

"out.txt"

1
0.8
0.6
0.4
0.2
0
−0.2
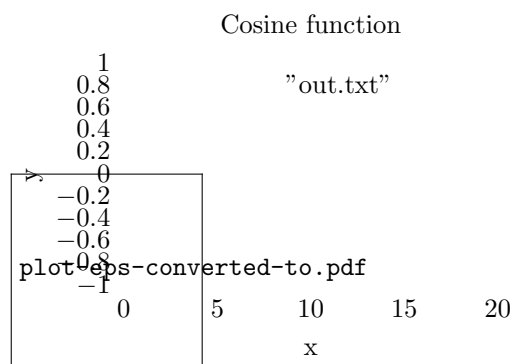−0.4
−0.6
−0.8
−1

plot-eps-converted-to.pdf

0   5   10   15   20

x

Figure 1: Illustration of the cosine function