Appendix C

MATLAB's Simulink Tutorial

Figure C.1 MATLAB Command Window showing how to access Simulink. The **Simulink Library Browser** button is shown circled

Figure C.2 Simulink Library Browser window showing: **a.** the **Create a new model** button encircled; **b.** resulting **untitled** model window

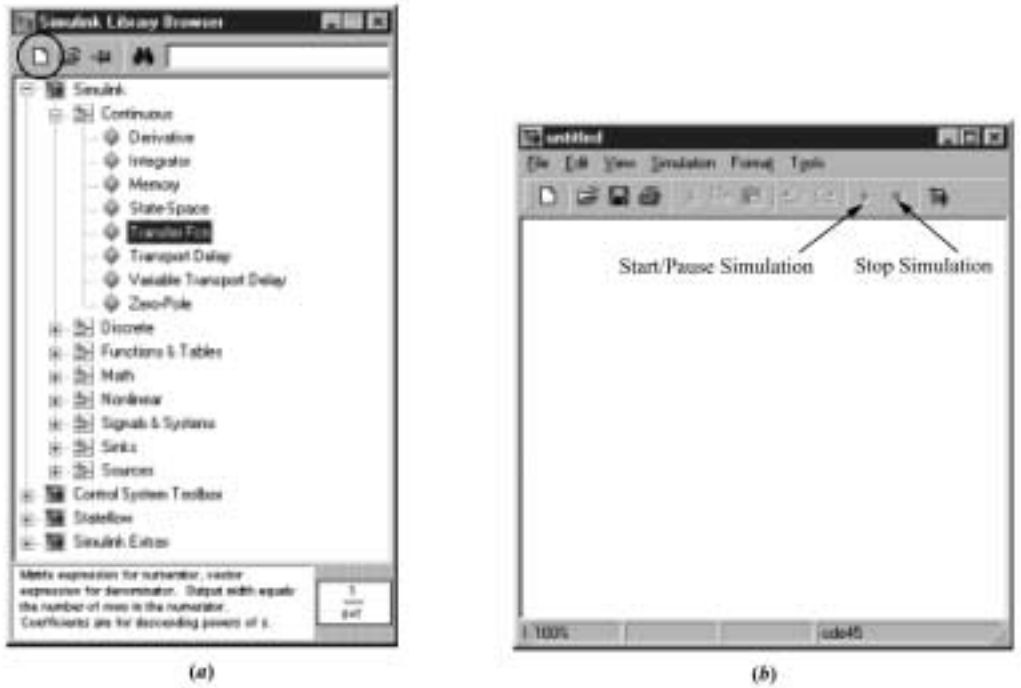
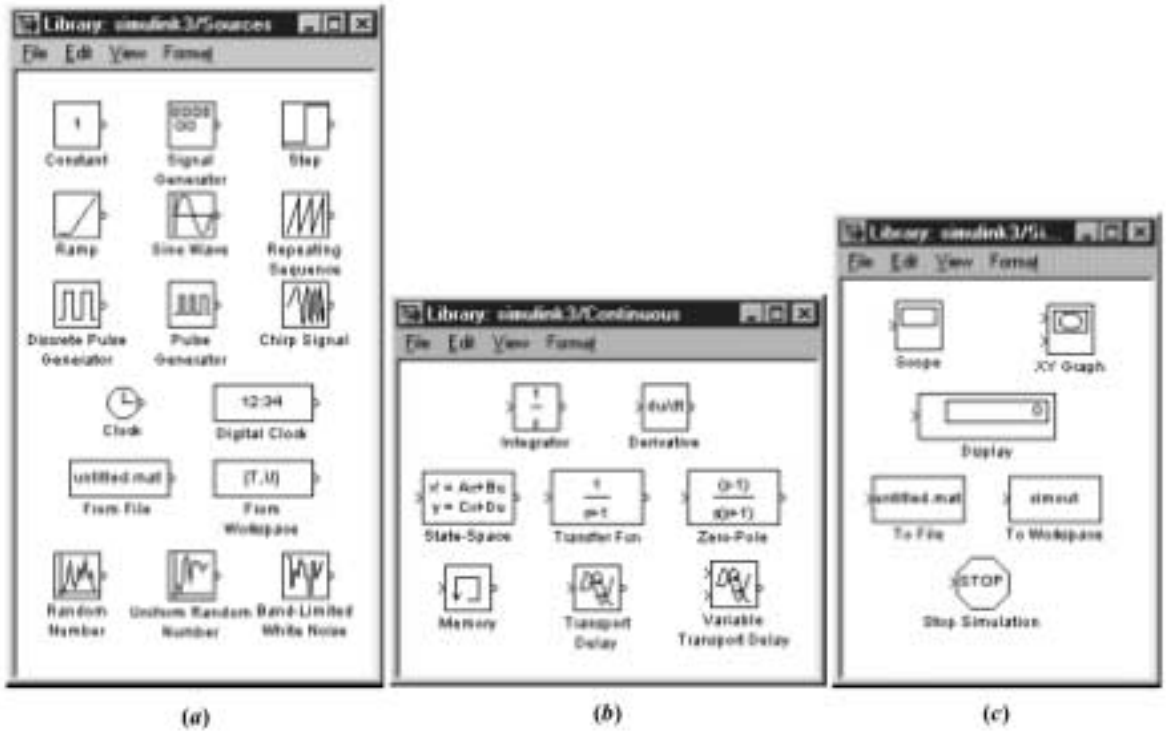


Figure C.3
Simulink libraries:
a. sources;
b. continuous systems;
c. sinks



(a) (b) (c)

Figure C.4
Simulink Block Library window

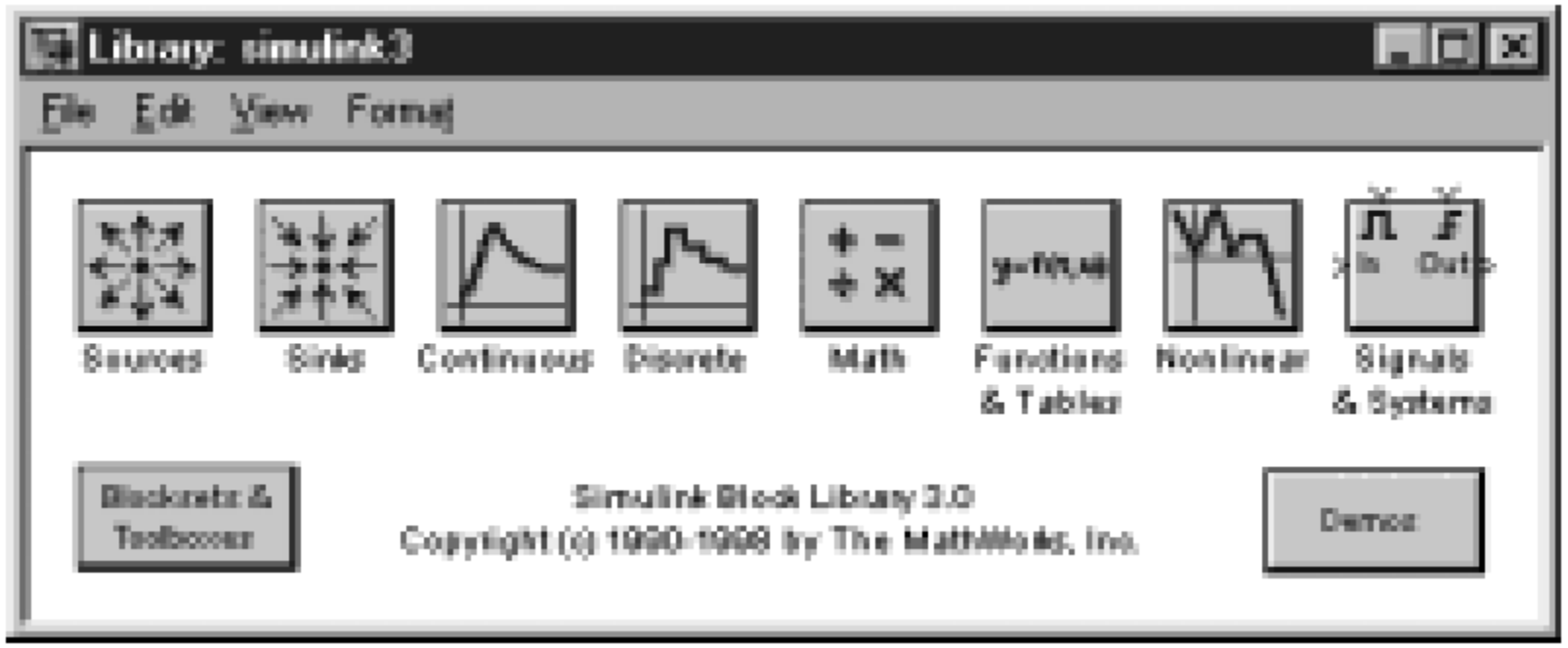


Figure C.5
Simulink block diagram for Example C.1

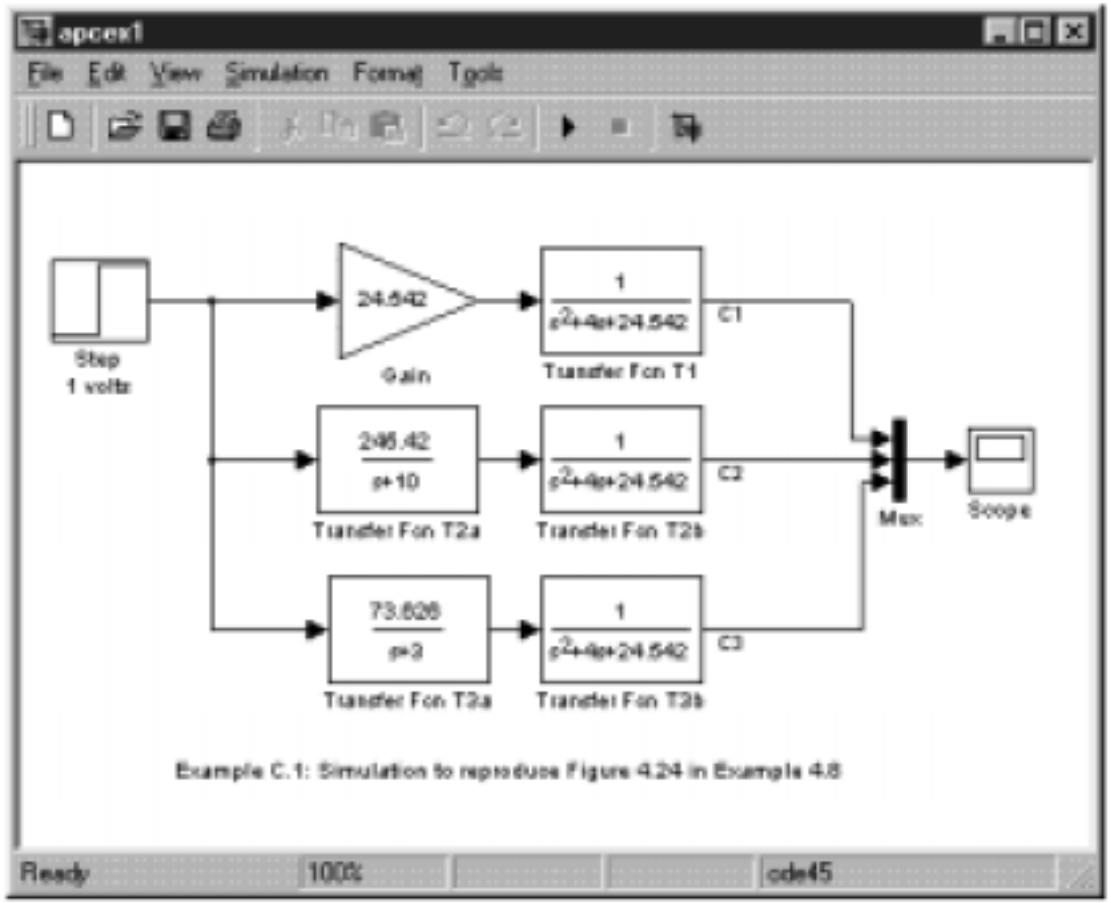
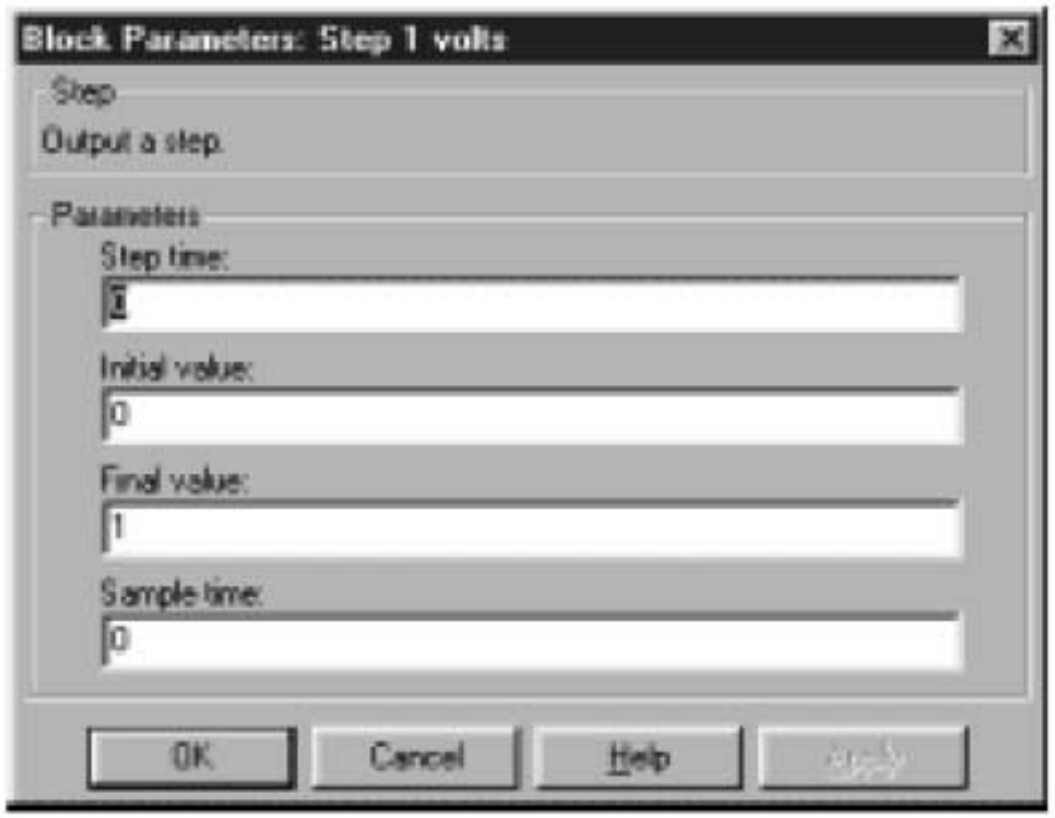
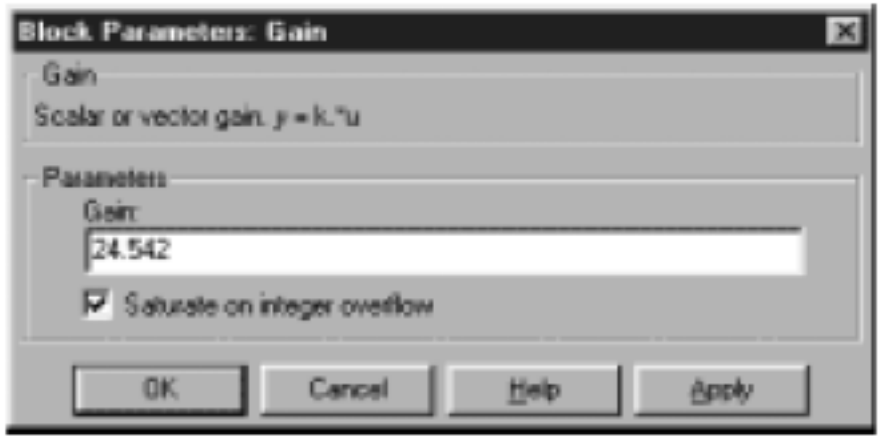


Figure C.6
Block Parameters windows for:
a. 1 volt step source;
(figure continues)

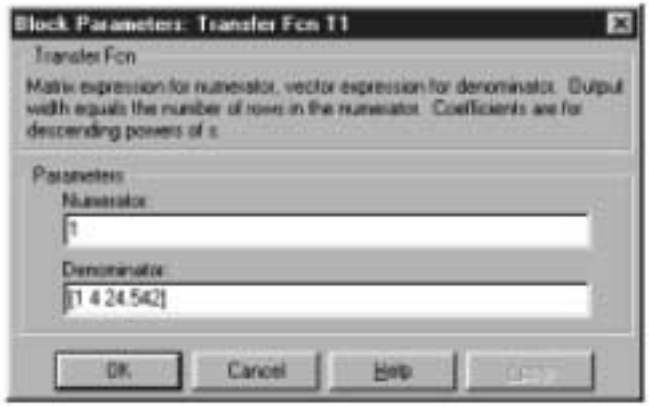


(a)

Figure C.6
(continued)
b. gain;
c. transfer function 1;

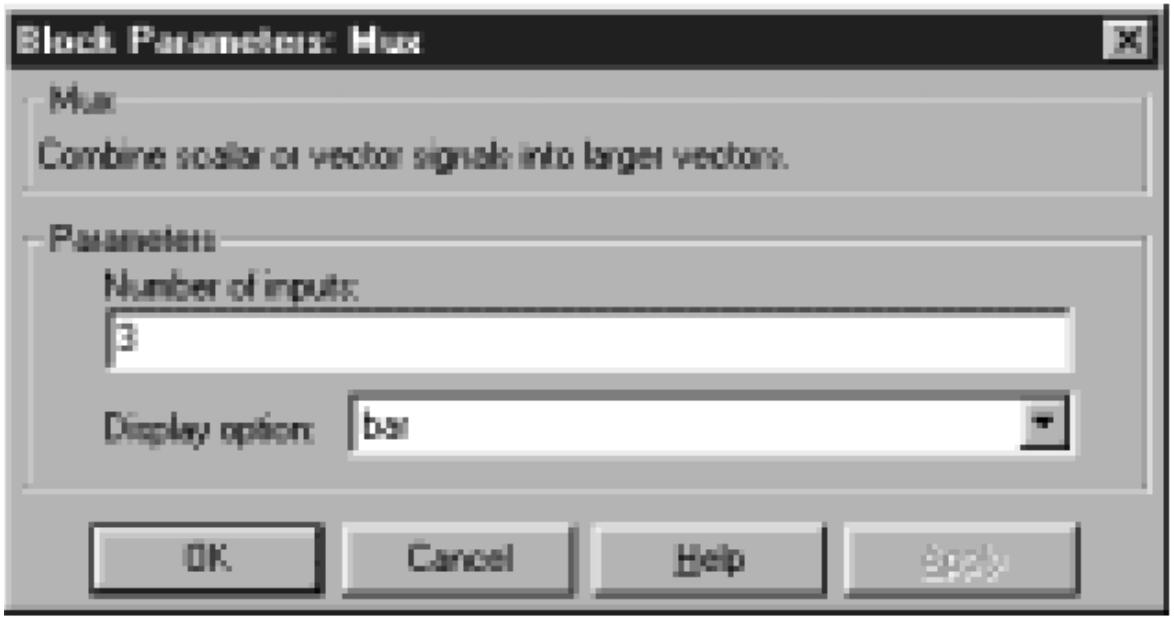


(*b*)



(*c*)

Figure C.6
(continued)
d. mux



(d)

Figure C.7
Windows for the scope:
a. Scope;
b. 'Scope' properties, **General** tab;
c. 'Scope' Properties, **Data history** tab;
d. 'Scope' properties: axis 1

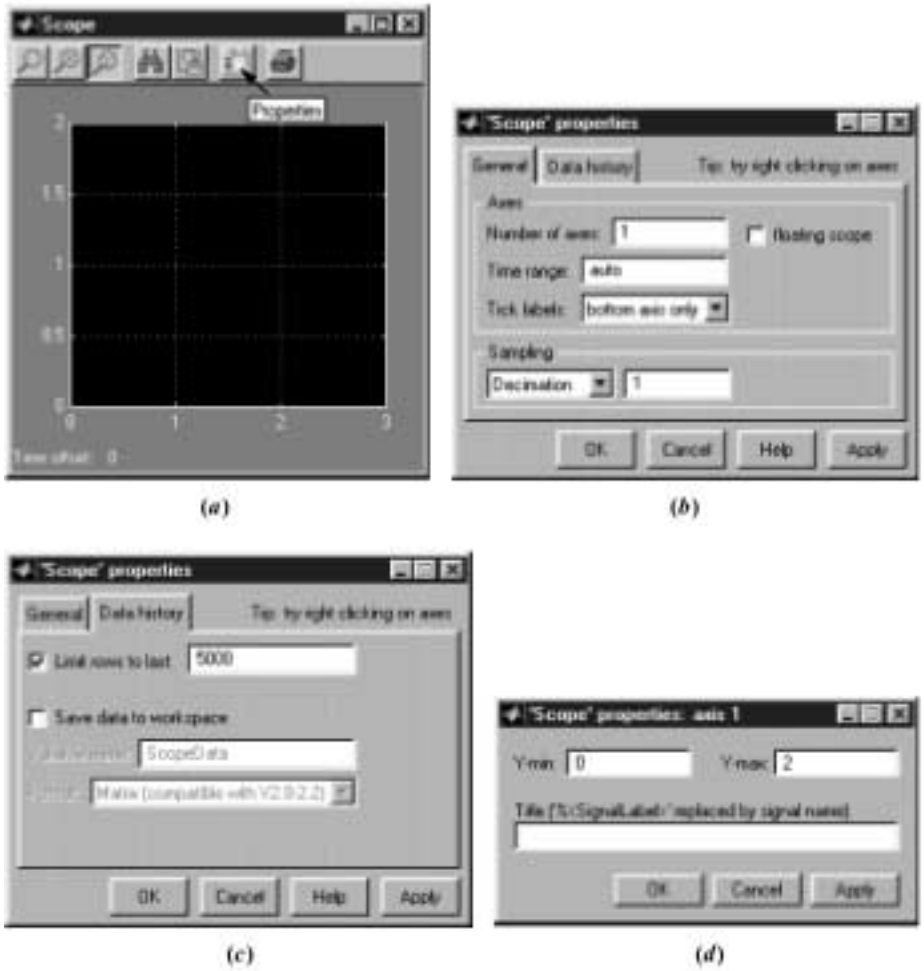


Figure C.8 Simulation Parameters window for **Solver** tab

Figure C.9
Scope window after Example C.1 simulation stops

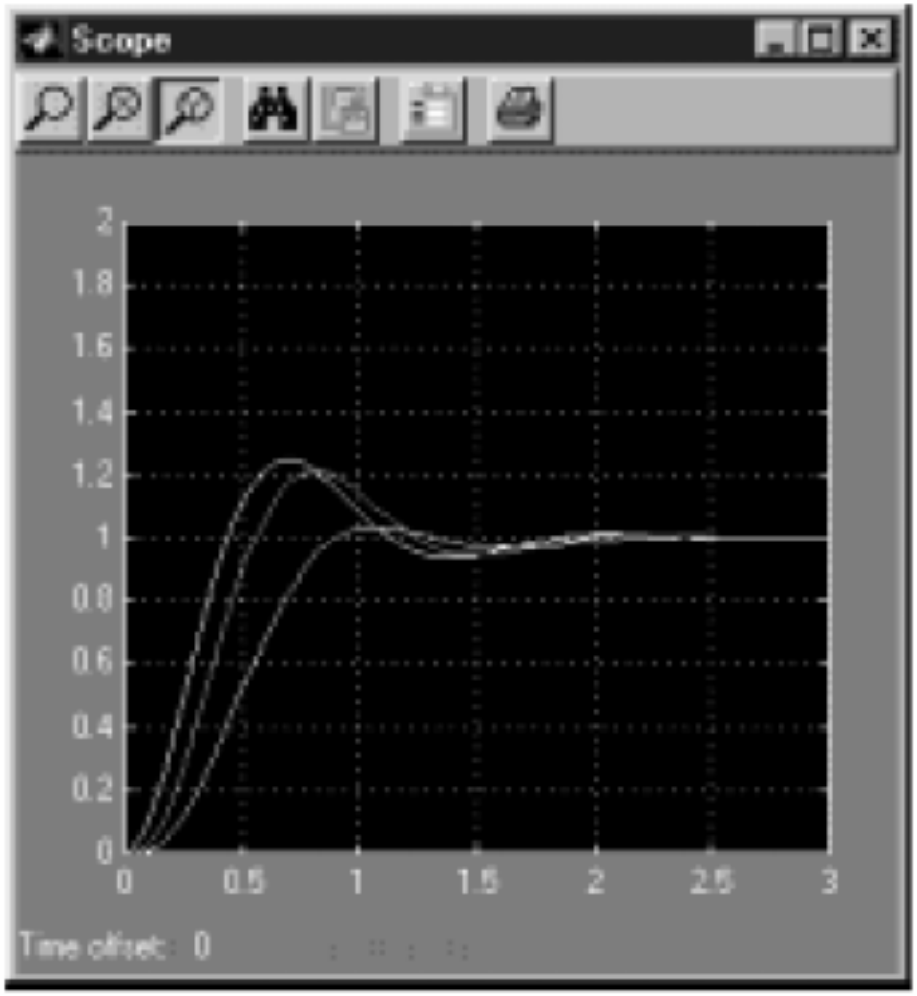


Figure C.10
Simulink block diagram for Example C.2

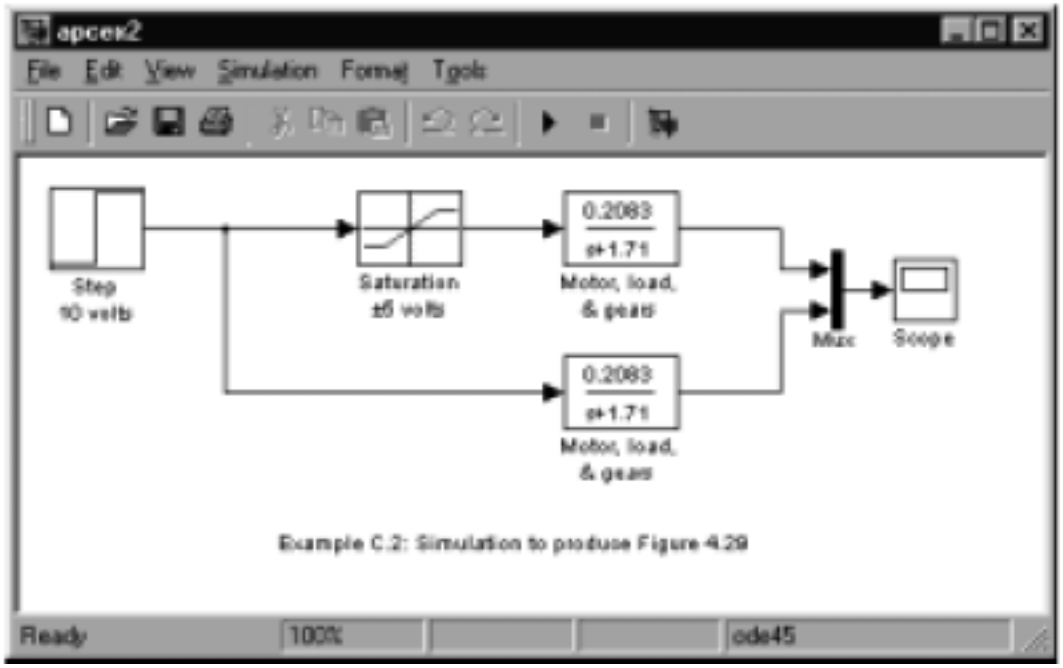
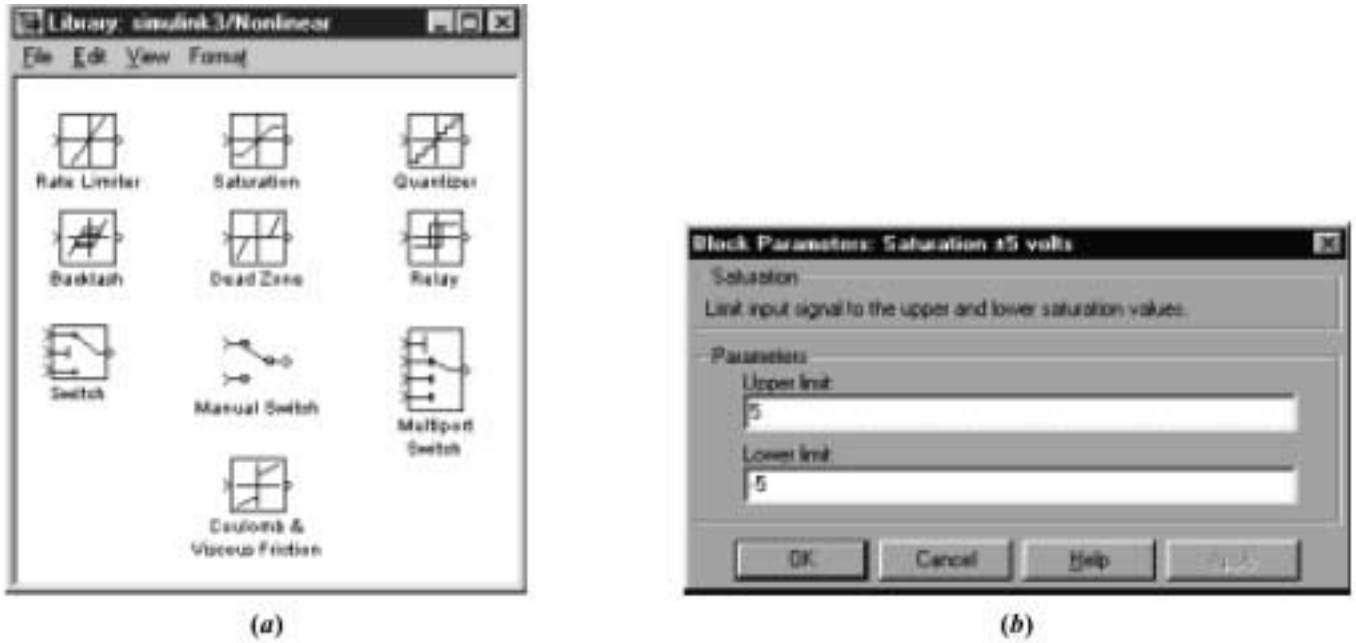


Figure C.11
a. Simulink library for nonlinearities;
b. parameter settings for saturation



(a) (b)

Figure C.12
Scope window after simulation of Example C.2 stops. The bottom curve is the output with saturation

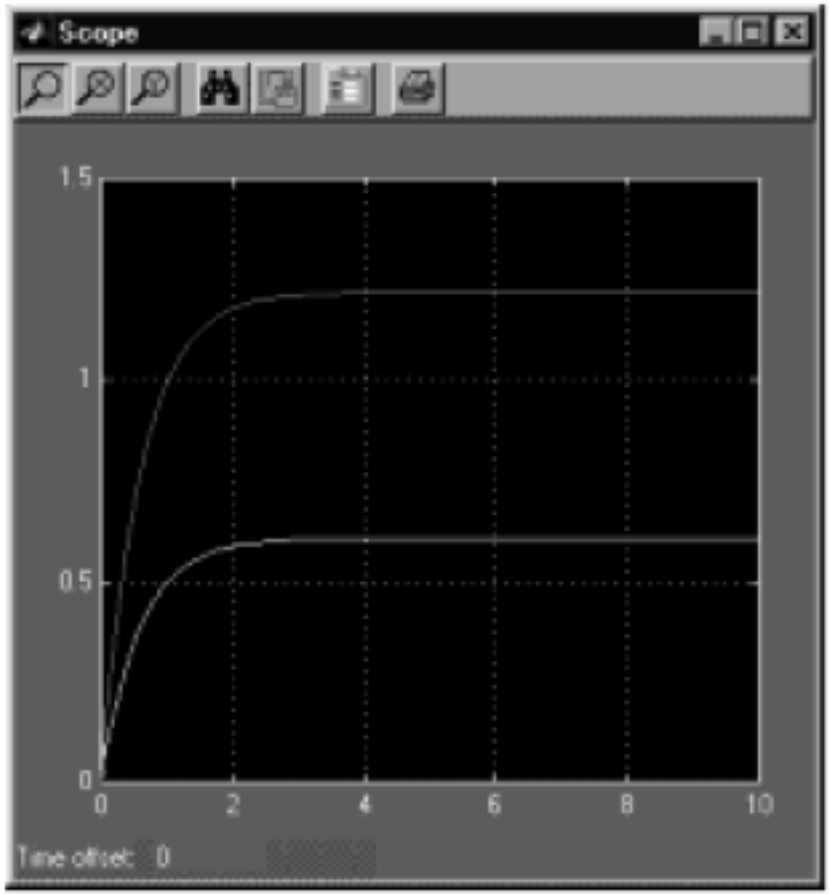
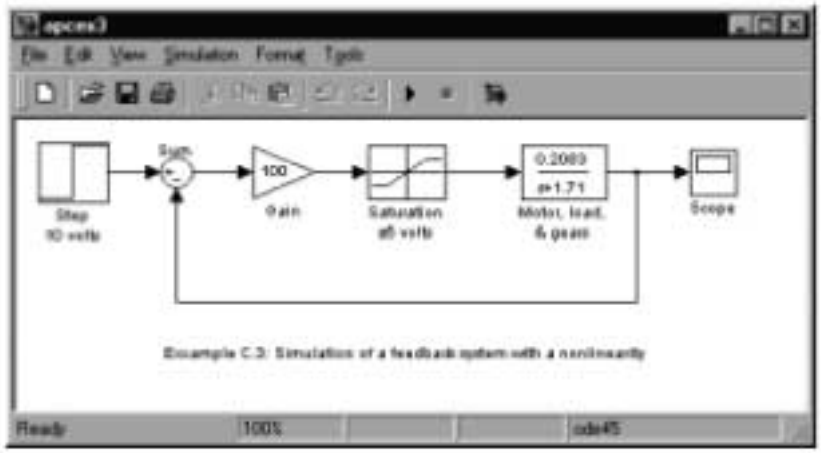
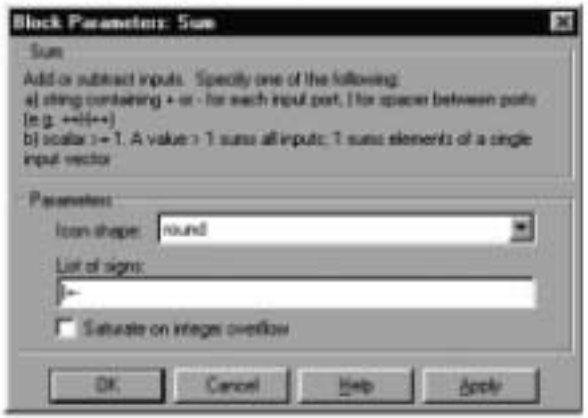


Figure C.13
a. Simulation block diagram for a feedback system with saturation;
b. block parameter window for the summer



(a)



(b)

Figure C.14
Simulation output for Example C.3

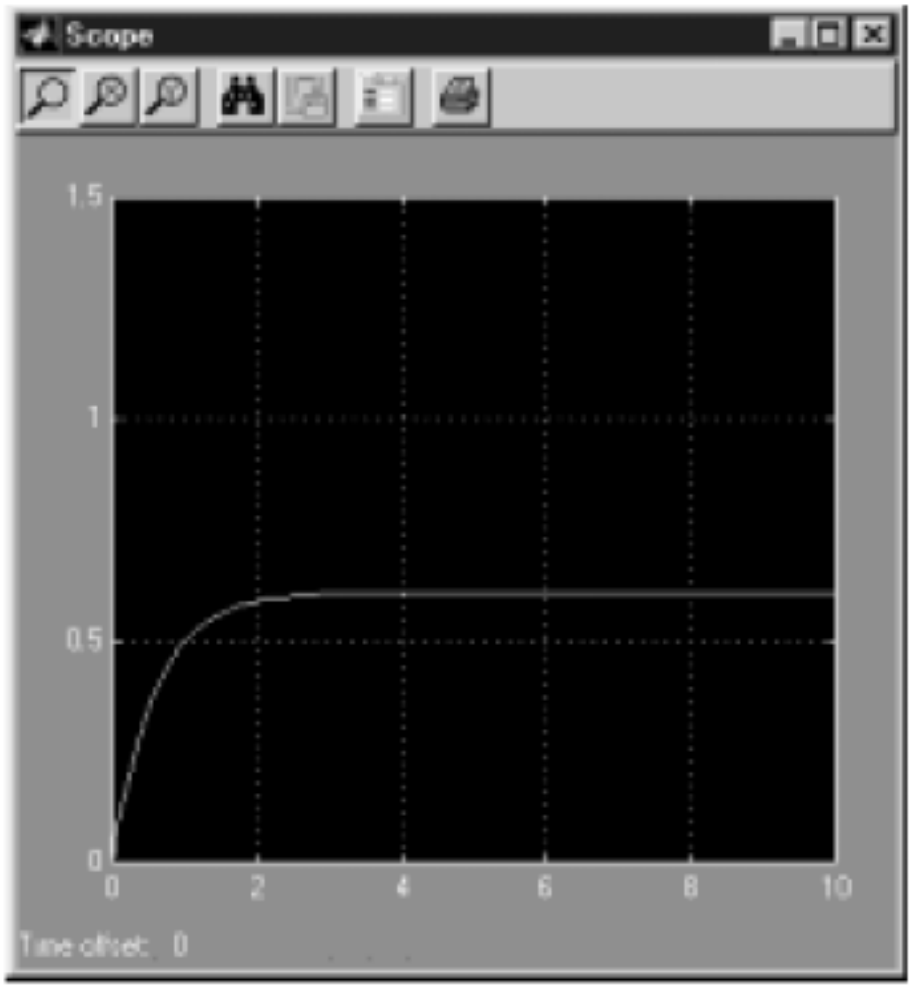


Figure C.15
Simulink block diagram for simulating digital systems two ways

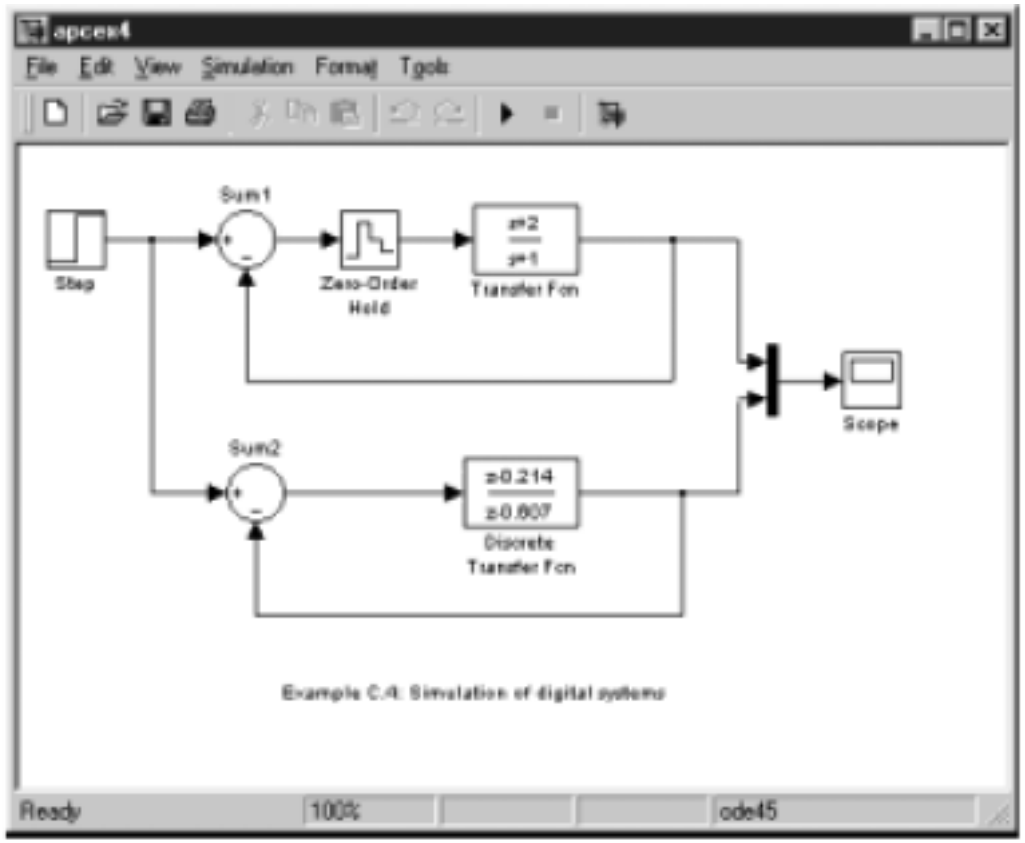
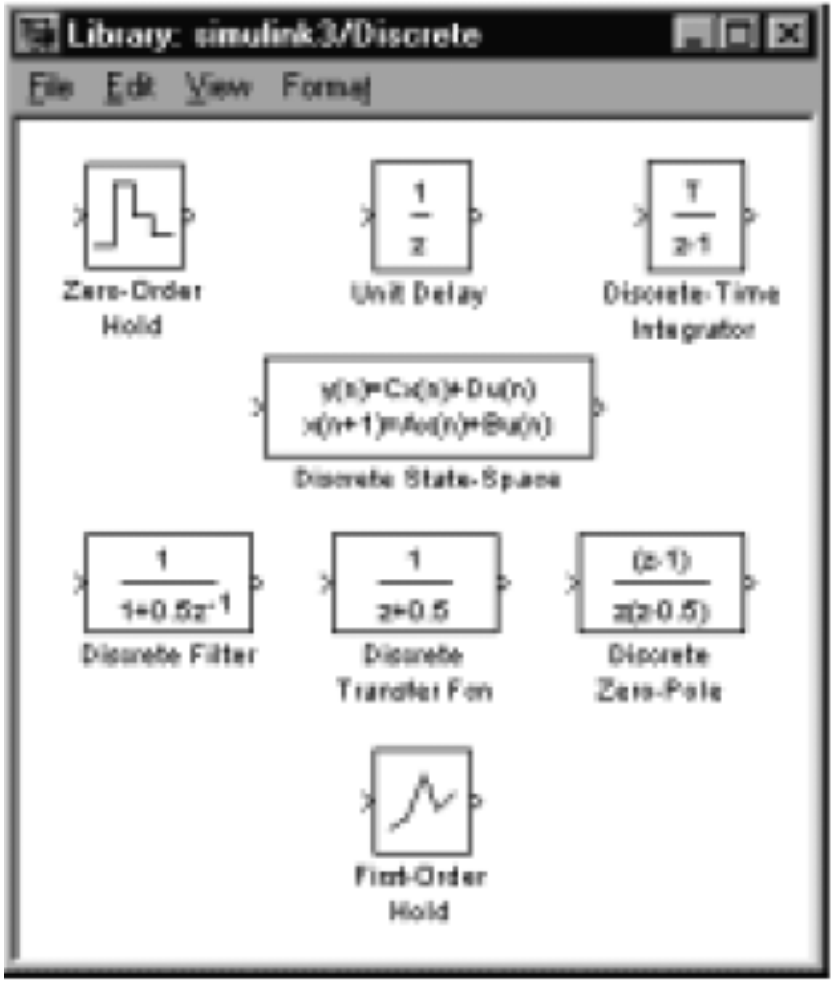
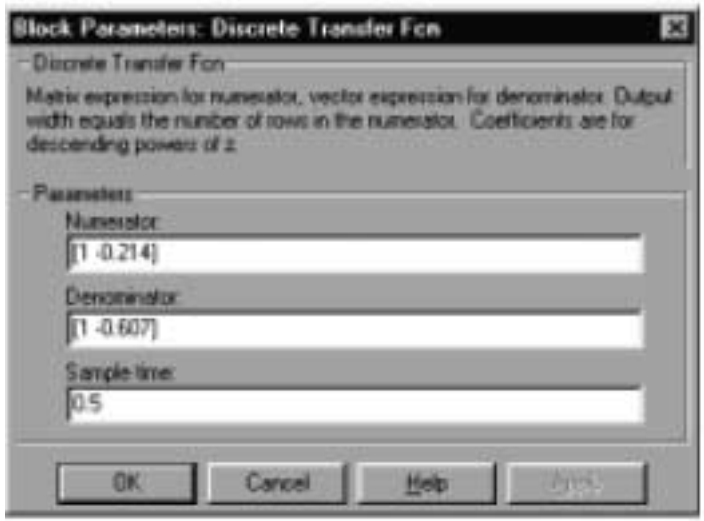


Figure C.16
Simulinks library of discrete parts



(*a*)



(*b*)

Figure C.17
Block Parameter windows for:
a. Zero-Order Hold block;
b. Discrete Transfer Fcn block

Figure C.18
Outputs of the digital systems