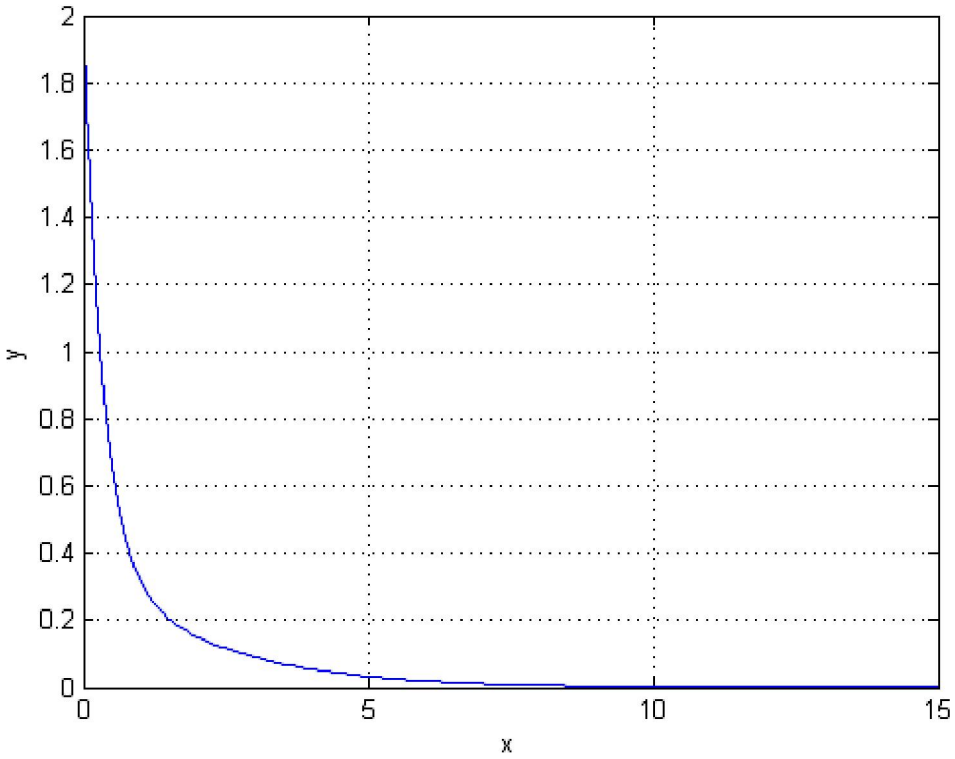
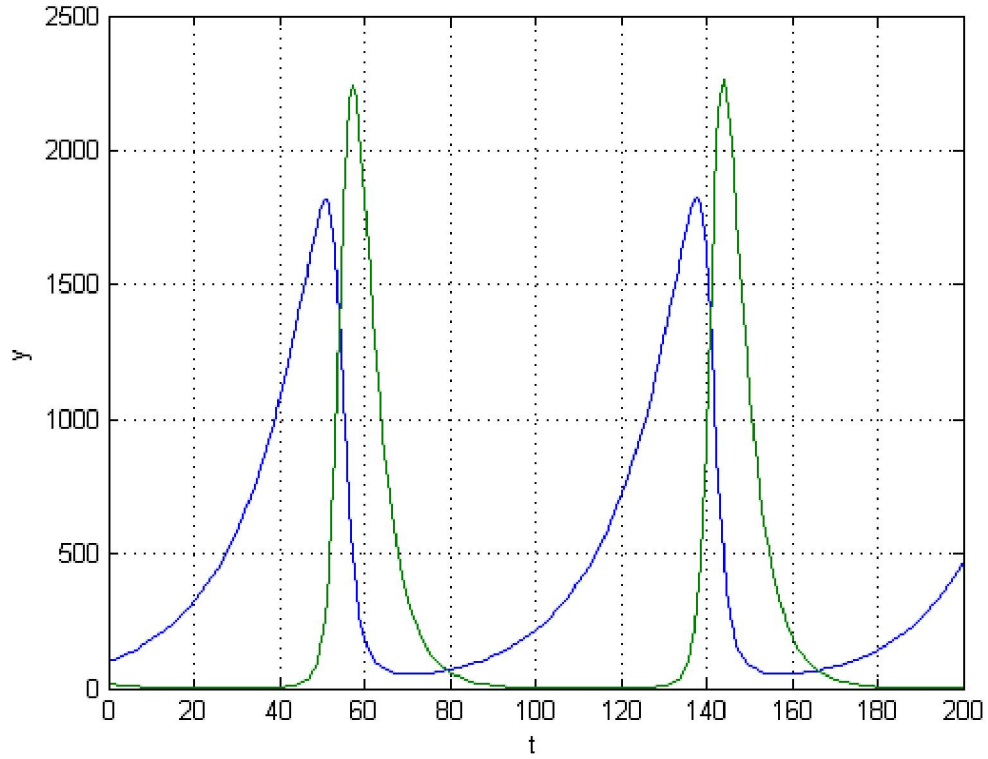
```
%Testataufgaben Kapitel 7
%Felix Rohrer
clear
format compact
```

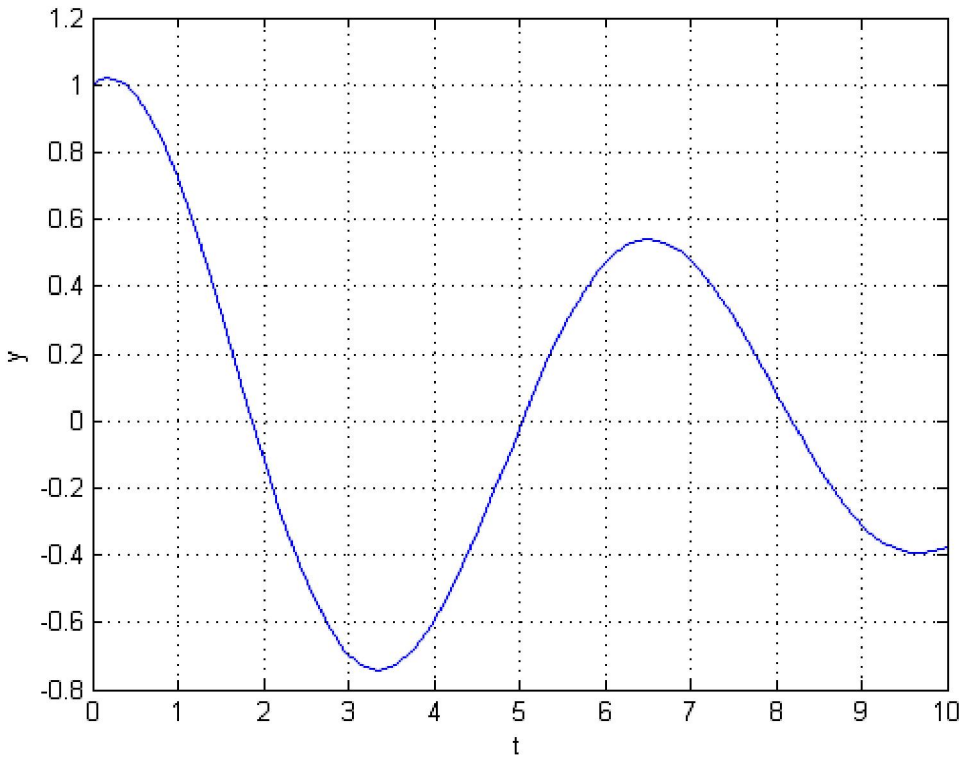
```
%Aufgabe 7.1
%Intervallgrenzen
xa=0;
xb=15;
%Anfangsbedingung
y0=2;
%Rechte Seite der DGL
F = @(x,y) exp(-0.5.*x)-(3.*y);
%DGL lösen
[x,y] = ode45(F, [xa,xb], y0);
%plot
plot(x,y)
xlabel('x'); ylabel('y'); grid on;
```




```
%Aufgabe 7.2
ta=0;
tb=200;
y10=100;
y20=20;
F = @(x,y) [y(1).*(0.06-0.0002.*y(2));y(2).*(-0.2+0.0004.*y(1))];
[t,y] = ode45(F, [ta,tb], [y10,y20]);
plot(t,y)
xlabel('t'); ylabel('y'); grid on;
```




```
%Aufgabe 7.3
ta=0;
tb=10;
y10=1;
y20=0.2;
F = @(x,y) [y(2);-0.2.*y(2)-y(1)];
[t,y] = ode45(F, [ta,tb], [y10,y20]);
plot(t,y(:,1))
xlabel('t'); ylabel('y'); grid on;
```



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