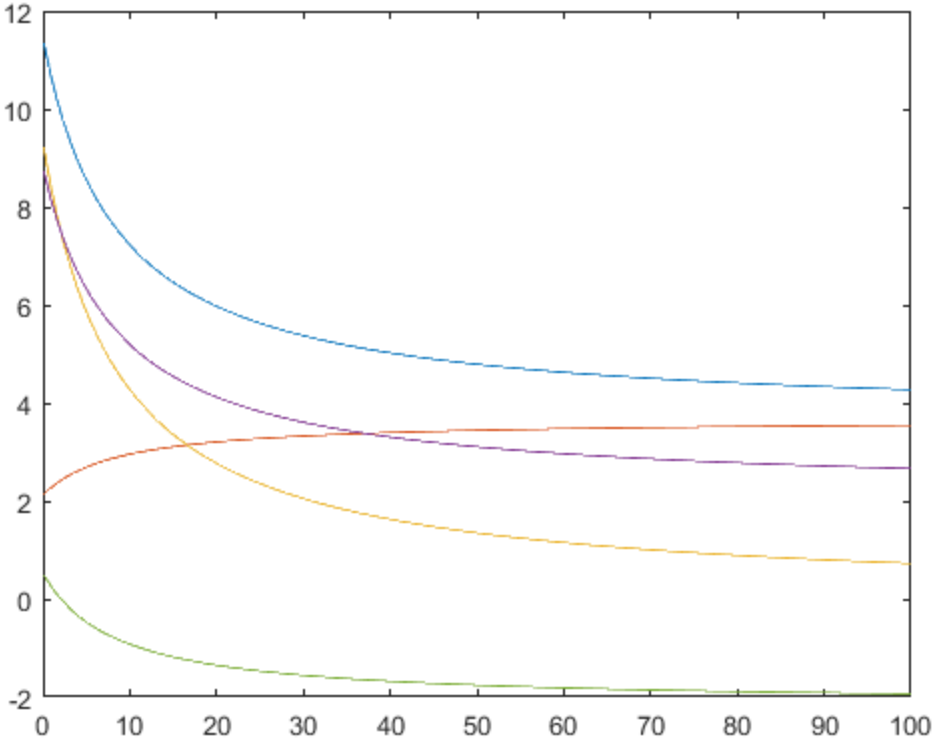
```
%Define the values of the resistors R1, R2, R4, and R5 in Oghms;
R1=5;
R2=25;
R4=6;
R5=15;

%Define the value of the voltage sources, V1 V2 in Volts;
V1=110;
V2=45;

%Vary the resistance of R3 from 0.1-100 and find I
for m=1:1000;
    R3(m)=m/10;

%Define the coefficient matrix A, Row by Row;
    A1=[1 -1 -1 0 0];
    A2=[0 0 1 -1 -1];
    A3=[R1 R2 0 0 0];
    A4=[0 R2 -R3(m) -R4 0];
    A5=[0 0 0 R4 -R5];
    A=[A1; A2; A3; A4; A5];

% Define the constants matric C;
    C=[0; 0; V1; 0; V2];

%Calculate the currents (X matrix);
    X=inv(A)*C;

%Extract the current from the X matrix;
    I1(m)=X(1);
    I2(m)=X(2);
    I3(m)=X(3);
    I4(m)=X(4);
    I5(m)=X(5);
end;

%Make plot of the currents as functions of R3
plot(R3,I1,R3,I2,R3,I3,R3,I4,R3,I5)
```



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