

```
commandwindow
clear
clc
```

%First Elimination

```
A=[1,1,-2,1,3,-1; 2,-1,1,2,1,-3; 1,3,-3,-1,2,1; 5,2,-1,-1,2,1; -3,-1,2,3,1,3; 4,3,1,-6,-3,-2]
%X=[T1;T2;T3;T4;T5;T6]
B=[4; 20; -15; -3; 16; -27]
P1=A(2,1)/A(1,1)
P2=A(3,1)/A(1,1)
P3=A(4,1)/A(1,1)
P4=A(5,1)/A(1,1)
P5=A(6,1)/A(1,1)
Paul1=[A(1,1) A(1,2) A(1,3) A(1,4) A(1,5) A(1,6);
        A(2,1)-(P1*A(1,1)) A(2,2)-(P1*A(1,2)) A(2,3)-(P1*A(1,3)) A(2,4)-(P1*A(1,4)) A(2,5)
        -(P1*A(1,5)) A(2,6)-(P1*A(1,6));
        A(3,1)-(P2*A(1,1)) A(3,2)-(P2*A(1,2)) A(3,3)-(P2*A(1,3)) A(3,4)-(P2*A(1,4)) A(3,5)
        -(P2*A(1,5)) A(3,6)-(P2*A(1,6));
        A(4,1)-(P3*A(1,1)) A(4,2)-(P3*A(1,2)) A(4,3)-(P3*A(1,3)) A(4,4)-(P3*A(1,4)) A(4,5)
        -(P3*A(1,5)) A(4,6)-(P3*A(1,6));
        A(5,1)-(P4*A(1,1)) A(5,2)-(P4*A(1,2)) A(5,3)-(P4*A(1,3)) A(5,4)-(P4*A(1,4)) A(5,5)
        -(P4*A(1,5)) A(5,6)-(P4*A(1,6));
        A(6,1)-(P5*A(1,1)) A(6,2)-(P5*A(1,2)) A(6,3)-(P5*A(1,3)) A(6,4)-(P5*A(1,4)) A(6,5)
        -(P5*A(1,5)) A(6,6)-(P5*A(1,6))];
B1=[B(1,1);
     B(2,1)-(P1*B(1,1));
     B(3,1)-(P2*B(1,1));
     B(4,1)-(P3*B(1,1));
     B(5,1)-(P4*B(1,1));
     B(6,1)-(P5*B(1,1))];
```

%Second Elimination

```
H1=Paul1(3,2)/Paul1(2,2)
H2=Paul1(4,2)/Paul1(2,2)
H3=Paul1(5,2)/Paul1(2,2)
H4=Paul1(6,2)/Paul1(2,2)
Paul2=[Paul1(1,1) Paul1(1,2) Paul1(1,3) Paul1(1,4) Paul1(1,5) Paul1(1,6);
        Paul1(2,1) Paul1(2,2) Paul1(2,3) Paul1(2,4) Paul1(2,5) Paul1(2,6);
        Paul1(3,1) Paul1(3,2)-(H1*Paul1(2,2)) Paul1(3,3)-(H1*Paul1(2,3)) Paul1(3,4)-
        (H1*Paul1(2,4)) Paul1(3,5)-(H1*Paul1(2,5)) Paul1(3,6)-(H1*Paul1(2,6));
        Paul1(4,1) Paul1(4,2)-(H2*Paul1(2,2)) Paul1(4,3)-(H2*Paul1(2,3)) Paul1(4,4)-
        (H2*Paul1(2,4)) Paul1(4,5)-(H2*Paul1(2,5)) Paul1(4,6)-(H2*Paul1(2,6));
        Paul1(5,1) Paul1(5,2)-(H3*Paul1(2,2)) Paul1(5,3)-(H3*Paul1(2,3)) Paul1(5,4)-
        (H3*Paul1(2,4)) Paul1(5,5)-(H3*Paul1(2,5)) Paul1(5,6)-(H3*Paul1(2,6));
        Paul1(6,1) Paul1(6,2)-(H4*Paul1(2,2)) Paul1(6,3)-(H4*Paul1(2,3)) Paul1(6,4)-
        (H4*Paul1(2,4)) Paul1(6,5)-(H4*Paul1(2,5)) Paul1(6,6)-(H4*Paul1(2,6))];
B2=[B1(1,1);
     B1(2,1);
     B1(3,1)-(H1*B1(2,1));
     B1(4,1)-(H2*B1(2,1));
```

```
B1(5,1)-(H3*B1(2,1));
B1(6,1)-(H4*B1(2,1))]
```

%Third Elimination

```
I1=Paul2(4,3)/Paul2(3,3)
I2=Paul2(5,3)/Paul2(3,3)
I3=Paul2(6,3)/Paul2(3,3)
Paul3=[Paul2(1,1) Paul2(1,2) Paul2(1,3) Paul2(1,4) Paul2(1,5) Paul2(1,6);
        Paul2(2,1) Paul2(2,2) Paul2(2,3) Paul2(2,4) Paul2(2,5) Paul2(2,6);
        Paul2(3,1) Paul2(3,2) Paul2(3,3) Paul2(3,4) Paul2(3,5) Paul2(3,6);
        Paul2(4,1) Paul2(4,2) Paul2(4,3)-(I1*Paul2(3,3)) Paul2(4,4)-(I1*Paul2(3,4)) Paul2(4,5)-(I1*Paul2(3,5)) Paul2(4,6)-(I1*Paul2(3,6));
        Paul2(5,1) Paul2(5,2) Paul2(5,3)-(I2*Paul2(3,3)) Paul2(5,4)-(I2*Paul2(3,4)) Paul2(5,5)-(I2*Paul2(3,5)) Paul2(5,6)-(I2*Paul2(3,6));
        Paul2(6,1) Paul2(6,2) Paul2(6,3)-(I3*Paul2(3,3)) Paul2(6,4)-(I3*Paul2(3,4)) Paul2(6,5)-(I3*Paul2(3,5)) Paul2(6,6)-(I3*Paul2(3,6))];
B3=[B2(1,1);
     B2(2,1);
     B2(3,1);
     B2(4,1)-(I1*B2(3,1));
     B2(5,1)-(I2*B2(3,1));
     B2(6,1)-(I3*B2(3,1))]
```

%Forth Elimination

```
L1=Paul3(5,4)/Paul3(4,4)
L2=Paul3(6,4)/Paul3(4,4)
Paul4=[Paul3(1,1) Paul3(1,2) Paul3(1,3) Paul3(1,4) Paul3(1,5) Paul3(1,6);
        Paul3(2,1) Paul3(2,2) Paul3(2,3) Paul3(2,4) Paul3(2,5) Paul3(2,6);
        Paul3(3,1) Paul3(3,2) Paul3(3,3) Paul3(3,4) Paul3(3,5) Paul3(3,6);
        Paul3(4,1) Paul3(4,2) Paul3(4,3) Paul3(4,4) Paul3(4,5) Paul3(4,6);
        Paul3(5,1) Paul3(5,2) Paul3(5,3) Paul3(5,4)-(L1*Paul3(4,4)) Paul3(5,5)-(L1*Paul3(4,5)) Paul3(5,6)-(L1*Paul3(4,6));
        Paul3(6,1) Paul3(6,2) Paul3(6,3) Paul3(6,4)-(L2*Paul3(4,4)) Paul3(6,5)-(L2*Paul3(4,5)) Paul3(6,6)-(L2*Paul3(4,6))];
B4=[B3(1,1);
     B3(2,1);
     B3(3,1);
     B3(4,1);
     B3(5,1)-(L1*B3(4,1));
     B3(6,1)-(L2*B3(4,1))]
```

%Fifth Elimination

```
O1=Paul4(6,5)/Paul4(5,5)
Paul5=[Paul4(1,1) Paul4(1,2) Paul4(1,3) Paul4(1,4) Paul4(1,5) Paul4(1,6);
        Paul4(2,1) Paul4(2,2) Paul4(2,3) Paul4(2,4) Paul4(2,5) Paul4(2,6);
        Paul4(3,1) Paul4(3,2) Paul4(3,3) Paul4(3,4) Paul4(3,5) Paul4(3,6);
        Paul4(4,1) Paul4(4,2) Paul4(4,3) Paul4(4,4) Paul4(4,5) Paul4(4,6);
        Paul4(5,1) Paul4(5,2) Paul4(5,3) Paul4(5,4) Paul4(5,5) Paul4(5,6);
        Paul4(6,1) Paul4(6,2) Paul4(6,3) Paul4(6,4) Paul4(6,5)-(O1*Paul4(5,5)) Paul4(6,6)-(O1*Paul4(5,6))];
B5=[B4(1,1);
```

```
B4(2,1);  
B4(3,1);  
B4(4,1);  
B4(5,1);  
B4(6,1)-(O1*B4(5,1))]
```

%Substitution

```
T6 = B5(6,1)/Paul5(6,6)  
T5 = (B5(5,1)-(Paul5(5,6)*T6))/Paul5(5,5)  
T4 = (B5(4,1)-(Paul5(4,6)*T6)-(Paul5(4,5)*T5))/Paul5(4,4)  
T3 = (B5(3,1)-(Paul5(3,6)*T6)-(Paul5(3,5)*T5)-(Paul5(3,4)*T4))/Paul5(3,3)  
T2 = (B5(2,1)-(Paul5(2,6)*T6)-(Paul5(2,5)*T5)-(Paul5(2,4)*T4)-(Paul5(2,3)*T3))/Paul5(2,2)  
T1 = (B5(1,1)-(Paul5(1,6)*T6)-(Paul5(1,5)*T5)-(Paul5(1,4)*T4)-(Paul5(1,3)*T3)-(Paul5(1,2) ↵  
*T2))/Paul5(1,1)
```