1	1		0	3	=		4
2	1		-1	1			1
3	-1		-1	2			-3
2	2		3	-1			4

1) A(1,1)=L*U

1	1	→	1			1	1	
2	1		2	1			1	

2) A(1,2)=(L*U)^-1*A(1,2)

2a) B<=L^-1*A(1,2)

Solve L*B=A(1,2) for B

Solve

1					=	0	3	
2	1					-1	1	

we get B

1			0	3	=	0	3	
2	1		-1	-5		-1	1	

2b) R<=U^-1*B

Solve U*R=B for U

Solve

1	1				=	0	3	
	1					-1	-5	

we get R

1	1		1	8	=	0	3	
	1		-1	-5		-1	-5	

3) b(1)=(L*U)^-1*b(1)

3a) L^-1*b = e

Solve L*e=b for e

Solve

1			=	4
2	1			1

we get e

1		4	=	4
2	1	-7		1

3b) d<-U^-1*e

Solve U*d=e for d

Solve

1	1		=	4
	1			-7

we get e

1	1	11	=	4
	1	-7		-7

The matrix looks now like this:

1	0	1	8	= 11
0	1	-1	-5	-7
3	-1	-1	2	-3
2	2	3	-1	4

4) A(2,1)=A(2,1)-A(2,1)*A(1,1)

Since A(1,1)=I we get A(2,1)=0

4) A(2,2)=A(2,2)-A(2,1)*A(1,2)

4a) multiply A(2,1)*A(1,2)

3	-1	1	8	=	4	29
2	2	-1	-5		0	6

4a) subtract

-1	2	-	4	29	=	-5	-27
3	-1		0	6		3	-7

5) b(2)=b(2)-A(2,1)*b(1)

5a) multiply A(2,1)*b(1)

3	-1	11	=	40
2	2	-7		8

5b) subtract

-3	-	40	=	43
4		8		-4

We endup with the system

1	1	1	8	=	11
0	1	-1	-5		-7
0	0	-5	-27		43
0	0	3	-7		-4