

```
> with(LinearAlgebra):
> A:=<<-3,-2,2,1,0>|<-4,1,-1,0,1>|<0,1,0,0,0>|<0,0,1,0,0>|<0,0,0,1,0>|<0,0,0,0,1>|<0,2,4,3,4>>;
```

$$A := \begin{bmatrix} -3 & -4 & 0 & 0 & 0 & 0 & 0 \\ -2 & 1 & 1 & 0 & 0 & 0 & 2 \\ 2 & -1 & 0 & 1 & 0 & 0 & 4 \\ 1 & 0 & 0 & 0 & 1 & 0 & 3 \\ 0 & 1 & 0 & 0 & 0 & 1 & 4 \end{bmatrix}$$

(1)

```
> #Pivot in the 2,2 position, Current solution is (0,0,2,4,3,4).
> A1:=RowOperation(A,[1,2],4):
> A2:=RowOperation(A1,[3,2],1):
> A3:=RowOperation(A2,[5,2],-1);
```

$$A3 := \begin{bmatrix} -11 & 0 & 4 & 0 & 0 & 0 & 8 \\ -2 & 1 & 1 & 0 & 0 & 0 & 2 \\ 0 & 0 & 1 & 1 & 0 & 0 & 6 \\ 1 & 0 & 0 & 0 & 1 & 0 & 3 \\ 2 & 0 & -1 & 0 & 0 & 1 & 2 \end{bmatrix}$$

(2)

```
> #Pivot in the 5,1 position. Current solution is (0,2,0,6,3,2)
> A4:=RowOperation(A3,5,1/2):
> A5:=RowOperation(A4,[4,5],-1):
> A6:=RowOperation(A5,[2,5],2):
> A7:=RowOperation(A6,[1,5],11);
```

$$A7 := \begin{bmatrix} 0 & 0 & -\frac{3}{2} & 0 & 0 & \frac{11}{2} & 19 \\ 0 & 1 & 0 & 0 & 0 & 1 & 4 \\ 0 & 0 & 1 & 1 & 0 & 0 & 6 \\ 0 & 0 & \frac{1}{2} & 0 & 1 & -\frac{1}{2} & 2 \\ 1 & 0 & -\frac{1}{2} & 0 & 0 & \frac{1}{2} & 1 \end{bmatrix}$$

(3)

```
> #Pivot in the 4,3 position. Current solution is (1,4,0,6,2,0);
> A8:=RowOperation(A7,4,2):
> A9:=RowOperation(A8,[1,4],3/2):
> A10:=RowOperation(A9,[3,4],-1):
> A11:=RowOperation(A10,[5,4],1/2);
```

$$A11 := \begin{bmatrix} 0 & 0 & 0 & 0 & 3 & 4 & 25 \\ 0 & 1 & 0 & 0 & 0 & 1 & 4 \\ 0 & 0 & 0 & 1 & -2 & 1 & 2 \\ 0 & 0 & 1 & 0 & 2 & -1 & 4 \\ 1 & 0 & 0 & 0 & 1 & 0 & 3 \end{bmatrix}$$

(4)

