```
> with(linalg):
> a := matrix( [ [-2*I,4,0,0] , [-1,-2*I,0,0] , [1,4,-1-2*I,0] ] );
```

$$a := \begin{bmatrix} -2\,I & 4 & 0 & 0 \\ -1 & -2\,I & 0 & 0 \\ 1 & 4 & -1-2\,I & 0 \end{bmatrix} \tag{1}$$

```
> a1 := mulrow( a , 1 , 1/(-2*I));
```

$$a1 := \begin{bmatrix} 1 & 2\,I & 0 & 0 \\ -1 & -2\,I & 0 & 0 \\ 1 & 4 & -1-2\,I & 0 \end{bmatrix} \tag{2}$$

```
> addrow( a1, 1 , 2, 1);
```

$$\begin{bmatrix} 1 & 2\,I & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 1 & 4 & -1-2\,I & 0 \end{bmatrix} \tag{3}$$

```
> addrow( % , 1 , 3 , -1 );
```

$$\begin{bmatrix} 1 & 2\,I & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 4-2\,I & -1-2\,I & 0 \end{bmatrix} \tag{4}$$

```
> mulrow( % , 3 , 1/(4-2*I));
```

$$\begin{bmatrix} 1 & 2\,I & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{I}{2} & 0 \end{bmatrix} \tag{5}$$

```
> addrow( % , 3 , 1, -2*I );
```

$$\begin{bmatrix} 1 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 1 & -\frac{I}{2} & 0 \end{bmatrix} \tag{6}$$

```
> swaprow( % , 2 , 3);
```

$$\begin{bmatrix} 1 & 0 & -1 & 0 \\ 0 & 1 & -\frac{I}{2} & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix} \tag{7}$$