In [5]:

```
A=matrix(Zmod(5),[[0,3,3,1],[3,0,3,1],[1,1,2,2]]); show(A)
```

$$\begin{pmatrix} 0 & 3 & 3 & 1 \\ 3 & 0 & 3 & 1 \\ 1 & 1 & 2 & 2 \end{pmatrix}$$

In [8]:

```
B=column_matrix(QQ,[1,0,1]);show(B) # términos independientes
```

$$\begin{pmatrix} 1 \\ 0 \\ 1 \end{pmatrix}$$

In [12]:

```
C=block_matrix([[A,B]]); show(C) # la matriz ampliada
```

$$\begin{pmatrix} 0 & 3 & 3 & 1 & 1 \\ 3 & 0 & 3 & 1 & 0 \\ 1 & 1 & 2 & 2 & 1 \end{pmatrix}$$

In [13]:

```
D = C.echelon_form(); show(D)
```

$$\begin{pmatrix} 1 & 0 & 1 & 0 & 4 \\ 0 & 1 & 1 & 0 & 1 \\ 0 & 0 & 0 & 1 & 3 \end{pmatrix}$$

In [ ]:

```
#La solucion del sistema es: x1=4-t, x2=1-t, x3=t y x4=3
```