

Pensieve Header: Bug: RowReduce for SparseArrays fails at ridiculously low sizes (fixed in 8.0.4).

```
{$Version, $MachineType, $ProcessorType}
```

```
{8.0 for Microsoft Windows (64-bit) (October 7, 2011), PC, x86-64}
```

```
L = {a[4] + a[7] - a[10], a[5] + a[8], a[6] + a[9], a[2] + a[3] - a[4] + a[6] - a[7] - a[8]}
```

```
{a[4] + a[7] - a[10], a[5] + a[8], a[6] + a[9], a[2] + a[3] - a[4] + a[6] - a[7] - a[8]}
```

```
M = CoefficientArrays[L, Array[a, {10}]][[2]]
```

```
SparseArray[<13>, {4, 10}]
```

```
M // Normal // MatrixForm
```

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

```
RowReduce[M // Normal] // MatrixForm
```

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

```
RowReduce[M] // MatrixForm
```

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

```
1 + 1
```

```
2
```