```
syms x1 x2 x3 x4 x5 x6
eqn1 = x1 + x2 + 2*x3 + 2*x4 + 3*x5 + 3*x6 == 209
```

eqn1 = $x_1 + x_2 + 2\,x_3 + 2\,x_4 + 3\,x_5 + 3\,x_6 = 209$

```
eqn2 = x1 + 2*x2 + 3*x3 + x4 + 2*x5 + 3*x6 == 200
```

eqn2 = $x_1 + 2\,x_2 + 3\,x_3 + x_4 + 2\,x_5 + 3\,x_6 = 200$

```
eqn3 = 2*x1 + 3*x2 + x3 + 3*x4 + x5 + 2*x6 == 253
```

eqn3 = $2\,x_1 + 3\,x_2 + x_3 + 3\,x_4 + x_5 + 2\,x_6 = 253$

```
eqn4 = 2*x1 + 3*x2 + x3 + x4 + 3*x5 + 2*x6 == 215
```

eqn4 = $2\,x_1 + 3\,x_2 + x_3 + x_4 + 3\,x_5 + 2\,x_6 = 215$

```
eqn5 = 2*x1 + 3*x2 + x3 + 3*x4 + 2*x5 + x6 == 242
```

eqn5 = $2\,x_1 + 3\,x_2 + x_3 + 3\,x_4 + 2\,x_5 + x_6 = 242$

```
eqn6 = 3*x1 + x2 + 2*x3 + 2*x4 + x5 + 3*x6 == 229
```

eqn6 = $3\,x_1 + x_2 + 2\,x_3 + 2\,x_4 + x_5 + 3\,x_6 = 229$

```
[A,B] = equationsToMatrix([eqn1, eqn2, eqn3, eqn4, eqn5, eqn6], [x1, x2, x3, x4, x5, x6
```

A =

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

B =

$$\begin{pmatrix} 209 \\ 200 \\ 253 \\ 215 \\ 242 \\ 229 \end{pmatrix}$$

```
sol = linsolve(A,B)
```

sol =

$$\begin{pmatrix} 20 \\ 22 \\ 8 \\ 29 \\ 10 \\ 21 \end{pmatrix}$$