In[130]:=

```
A = {{3.0, 1.0, 2.0}, {-3.0, 5.0, 1.0}, {1.0, 1.0, 3.0}};
d = {{3.0, 0, 0}, {0, 5.0, 0}, {0, 0, 3.0}};
u = {{0, 1.0, 2.0}, {0, 0, 1.0}, {0, 0, 0}};
l = {{0, 0, 0}, {-3.0, 0, 0}, {1.0, 1.0, 0}};
b = Transpose[{{3.0, 7.0, 3.0}}];
x[1] = Transpose[{{0, 0, 0}}];
Do[x[n + 1] = LinearSolve[d, -(l + u).x[n] + b];
Print[x^n, "=", MatrixForm[x[n]]], {n, 1, 15}]
```

$$x=\begin{pmatrix}0\\0\\0\end{pmatrix}$$

$$x^{2}=\begin{pmatrix}1.\\1.4\\1.\end{pmatrix}$$

$$x^{3}=\begin{pmatrix}-0.133333\\1.8\\0.2\end{pmatrix}$$

$$x^{4}=\begin{pmatrix}0.266667\\1.28\\0.444444\end{pmatrix}$$

$$x^{5}=\begin{pmatrix}0.277037\\1.47111\\0.484444\end{pmatrix}$$

$$x^{6}=\begin{pmatrix}0.186667\\1.46933\\0.417284\end{pmatrix}$$

$$x^{7}=\begin{pmatrix}0.232033\\1.42854\\0.448\end{pmatrix}$$

$$x^{8}=\begin{pmatrix}0.225152\\1.44962\\0.446475\end{pmatrix}$$

$$x^{9}=\begin{pmatrix}0.219144\\1.4458\\0.441743\end{pmatrix}$$

$$x^{10}=\begin{pmatrix}0.223573\\1.44314\\0.44502\end{pmatrix}$$

$$x^{11}=\begin{pmatrix}0.222274\\1.44514\\0.44443\end{pmatrix}$$

$$x^{12}=\begin{pmatrix}0.222\\1.44448\\0.444195\end{pmatrix}$$

$$x^{13}=\begin{pmatrix}0.222377\\1.44436\\0.444507\end{pmatrix}$$

$$x^{14}=\begin{pmatrix}0.222208\\1.44452\\0.444421\end{pmatrix}$$

$$x^{15}=\begin{pmatrix}0.222211\\1.44444\\0.444422\end{pmatrix}$$