

# GAUSS SEIDAL METHOD

By  
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# SOLVE

$$10x + y - 2z = 7.74$$

$$x + 12y + z = 39.66$$

$$3x + 4y + 15z = 54.8$$

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$$x + 12y + z = 39.66$$

$$10x + y - 2z = 7.74$$

Not diagonally  
dominant

Diagonally dominant

$$\begin{array}{ccc|c} \text{w(3)} & 1 & 15 & 3 \times 4 + 15 \\ & 1 & 12 & 1 \times 12 + 1 \\ & 10 & 1 & 2 \times 10 + 1 \end{array}$$

$$10x + y - 2z = 7.74$$

$$x + 12y + z = 39.66$$

$$3x + 4y + 15z = 54.80$$

$$x = \frac{1}{10} (7.74 - y + 2z)$$

$$y = \frac{1}{12} (39.66 - x - z)$$

$$z = \frac{1}{15} (54.80 - 3x - 4y)$$

Initial ~~value~~ guess:  $x=0, y=0, z=0$

n	x	y	z
0	0	0	0
1	0.774	3.2405	2.6344
2	0.9768	3.004	2.6569
3	1.0049	2.9998	2.6524
4	1.00468	3.0002	2.6524