

6.2

(a) The sequence of points visited is:

$$\begin{aligned}\mathbf{x}^{(1)} &= \begin{pmatrix} 1 \\ 0 \\ -2 \end{pmatrix} + (2) \begin{pmatrix} 3 \\ 2 \\ 1 \end{pmatrix} = \begin{pmatrix} 7 \\ 4 \\ 0 \end{pmatrix} \\ \mathbf{x}^{(2)} &= \begin{pmatrix} 7 \\ 4 \\ 0 \end{pmatrix} + (4) \begin{pmatrix} 1 \\ 0 \\ -3 \end{pmatrix} = \begin{pmatrix} 11 \\ 4 \\ -12 \end{pmatrix} \\ \mathbf{x}^{(3)} &= \begin{pmatrix} 11 \\ 4 \\ -12 \end{pmatrix} + (1/2) \begin{pmatrix} -1 \\ 4 \\ 0 \end{pmatrix} = \begin{pmatrix} 21/2 \\ 6 \\ -12 \end{pmatrix}\end{aligned}$$

(b) The sequence of points visited is:

$$\begin{aligned}\mathbf{x}^{(1)} &= \begin{pmatrix} 1 \\ 0 \\ -2 \end{pmatrix} + (3) \begin{pmatrix} 4 \\ -1 \\ 2 \end{pmatrix} = \begin{pmatrix} 13 \\ -3 \\ 4 \end{pmatrix} \\ \mathbf{x}^{(2)} &= \begin{pmatrix} 13 \\ -3 \\ 4 \end{pmatrix} + (5) \begin{pmatrix} 0 \\ 2 \\ -1 \end{pmatrix} = \begin{pmatrix} 13 \\ 7 \\ -1 \end{pmatrix} \\ \mathbf{x}^{(3)} &= \begin{pmatrix} 13 \\ 7 \\ -1 \end{pmatrix} + (1) \begin{pmatrix} 1 \\ 2 \\ 1 \end{pmatrix} = \begin{pmatrix} 14 \\ 9 \\ 0 \end{pmatrix}\end{aligned}$$