Boxes Inside Matrices

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Which of the following would work for you?

\[
A = \begin{bmatrix} 1 & 2 & 2 \\ 1 & 2 & 2 \\ 1 & 2 & 2 \end{bmatrix}, \quad B = \begin{bmatrix} x & 2 & 2 \\ 2 & 2 \end{bmatrix}, \quad C = \begin{bmatrix} x & 2 & 2 \\ 2 & 2 \end{bmatrix},
\]

\[
D = \begin{bmatrix} x & 2 & 2 \\ 2 & 2 \\ 2 & 2 \end{bmatrix}, \quad E = \begin{bmatrix} x & 2 & 2 \\ 2 & 2 \\ 2 & 2 \end{bmatrix},
\]

\[
F = \begin{bmatrix} x & \begin{array}{c} y \\ 2 & 2 \\ 2 & 2 \end{array} \end{bmatrix}, \quad G = \begin{bmatrix} x & \begin{array}{c} y \\ 2 & 2 \\ 2 & 2 \end{array} \end{bmatrix}, \quad H = \begin{bmatrix} x & 2 & 2 \\ 2 & y \\ 2 & 2 \end{bmatrix}.
\]

The matrix square brackets in \(A, B,\) and \(C\) will scale correctly when you change the font sizes. The dimensions of the boxes in \(D, E, F, G,\) and \(H\) are specified explicitly, and hence will have to be modified accordingly when changing font sizes.

Needless to say, you can combine these constructions to put \textbf{ANY} kind of box(es) inside matrices!