



What is the fast way or method to identify or create the following matrices (less than 1 minute)?

Please do not use **the traditional way or method such as** (i.e.  $A = [1 \ 2 \ 3 \ 4 \ 5; \dots]$ ):

For **help** you can use the following commands :

`xi : st : xf; linspace(xi , xf , N ) ; ones(r , c ) ; zeros(r , c ) ; eye(r , c ) and diag( )`

$$A = \begin{bmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 10 \\ 11 & 12 & 13 & 14 & 15 & 16 & 17 & 18 & 19 & 20 \\ 21 & 22 & 23 & 24 & 25 & 26 & 27 & 28 & 29 & 30 \end{bmatrix}; \quad (1)$$

$$B = \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 66 \\ 0 & 0 & 0 & 0 \end{bmatrix}; \quad (2)$$

$$C = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 2 & 0 & 0 & 0 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 0 & 5 \end{bmatrix}; \quad (3)$$



$$D = \begin{bmatrix} 0 & 0 & 0 & 0 & 0 \\ 0 & -1,5 & 0 & 0 & 0 \\ 0 & 0 & -3 & 0 & 0 \\ 0 & 0 & 0 & -4,5 & 0 \\ 0 & 0 & 0 & 0 & -6 \end{bmatrix}; \quad (4)$$

$$E = \begin{bmatrix} 88 & 0 & 0 & 88 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 88 & 0 & 0 & 88 \end{bmatrix}; \quad (5)$$

$$F = \begin{bmatrix} 51 & 0 & 0 & 0 & 0 & 0 \\ 0 & 41 & 0 & 0 & 0 & 0 \\ 0 & 0 & 31 & 0 & 0 & 0 \\ 0 & 0 & 0 & 21 & 0 & 0 \\ 0 & 0 & 0 & 0 & 11 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}; \quad (6)$$

$$G = \begin{bmatrix} 2 & 3 & 4 & 5 & 6 & 7 \\ 1,1 & 1,2 & 1,3 & 1,4 & 1,5 & 1,6 \\ 8 & 6 & 4 & 2 & 0 & -2 \end{bmatrix}; \quad (7)$$

$$H = \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 77 & 77 & 0 \\ 0 & 77 & 77 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}; \quad (8)$$



$$I = \begin{bmatrix} 0 & 66 & 66 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 66 & 66 & 0 \end{bmatrix}; \quad (9)$$

$$J = \begin{bmatrix} 7 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 10 & 0 & 0 & 0 \\ 0 & 0 & 0 & 73 & 0 & 0 \\ 0 & 0 & 0 & 0 & 44 & 0 \\ 0 & 0 & 0 & 0 & 0 & 21 \end{bmatrix}; \quad (10)$$