Given `x = [3 1 5 7 9 2 6]`, explain what the following commands do by summarizing the net result of the command.

(i) `x(3)`

(ii) `x(1:5)`

(iii) `x(1:end)`

(iv) `x(1:end-1)`

(v) `x(6:-2:1)`

(vi) `x([1 6 2 1 1])`

(vii) `sum(x)`

(viii) `sort(x)`

Given the array `A = [2 6 9 7 ; 3 1 4 6 ; 5 3 2 7]`, explain the results of the following commands:

(i) `A'`

(ii) `A(:,[1 4])`

(iii) `A([2 3],[3 1])`

(iv) `reshape(A,2,6)`

(v) `A(:)`

(vi) `flipud(A)`

(vii) `fliplr(A)`

(viii) `[A A(end,:)]`

(ix) `A(1:3,:)`

(x) `[A ; A(1:2,:)]`

(xi) `sum(A)`

(xii) `sum(A')`

(xiii) `sum(A,2)`

$$A = \begin{pmatrix} 1 & 5 & 7 \\ 4 & -2 & 9 \\ 3 & 1 & 4 \end{pmatrix} \quad B = \begin{pmatrix} 1 & 3 & 5 \\ 1 & 0 & 3 \\ 2 & 7 & -1 \end{pmatrix}$$

$$C = \begin{pmatrix} 1 & 2 & 2 \\ 3 & 1 & 3 \end{pmatrix} \quad D = \begin{pmatrix} 1 & 5 \\ -1 & 3 \\ 2 & -2 \end{pmatrix}$$

The logistic function

$$f(x) = \frac{1}{1 + e^{-x}}$$

The tanh function

$$f(x) = \frac{e^x - e^{-x}}{e^x + e^{-x}}$$

The standardization function:

$$f(x_i) = \frac{x_i - \bar{x}}{s_x}$$

The normalization function:

$$f(x_i) = \frac{x_i - \min(x)}{\max(x) - \min(x)}$$