Basic Operations with Matrices

- Addition of Matrices
- Transpose of a Matrix
- Adding and Subtracting Matrices
- Scalar Multiplication

Matrix Multiplication

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \times \begin{pmatrix} u & v \\ w & x \end{pmatrix}$$

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \times \begin{pmatrix} u & v \\ w & x \end{pmatrix}$$

$$\begin{pmatrix} 3 & 1 \\ 2 & 4 \end{pmatrix} \times \begin{pmatrix} 2 & 5 \\ 4 & 1 \end{pmatrix}$$

Matrix Multiplication

$$\begin{pmatrix} \underline{a} & \underline{b} \\ c & d \end{pmatrix} \times \begin{pmatrix} u & v \\ w & x \end{pmatrix}$$

Matrix Multiplication

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Matrix Multiplication

$$\begin{pmatrix} a & b \\ c & d \end{pmatrix} \times \begin{pmatrix} u & v \\ w & x \end{pmatrix}$$

$$= \begin{pmatrix} au + bw & \ldots\ldots \\ \ldots\ldots & \ldots\ldots \end{pmatrix}$$

Basic Operations with Matrices

Transpose of a Matrix

- The transpose of a matrix is transformation of that matrix when all the rows are arranged into columns and columns arranged by rows.
- The transpose of a matrix A is usually denoted A^T or A'.
- The relevant R function is `t()`.