

The image features two thick black L-shaped brackets. One is positioned on the left side, with its vertical bar extending downwards and its horizontal bar extending to the right. The other is on the right side, with its vertical bar extending upwards and its horizontal bar extending to the left. These brackets frame the central text.

FUNDAMENTAL THEOREM OF COUNTING

Problem

A travel agency offers special weekend getaways to 4 different cities (LA, NY, Chicago, and Orlando) by air, rail, or bus. In how many ways can a trip be arranged?

Fundamental Theorem of Counting

$$\begin{array}{|c|} \hline \text{Total number} \\ \hline \text{of ways,} \\ \hline \text{possibilities,} \\ \hline \text{choices, etc.} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Number of} \\ \hline \text{choices in} \\ \hline \text{Category 1} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Number of} \\ \hline \text{choices in} \\ \hline \text{Category 2} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Number of} \\ \hline \text{choices in} \\ \hline \text{Category 3} \\ \hline \end{array} \times \dots$$