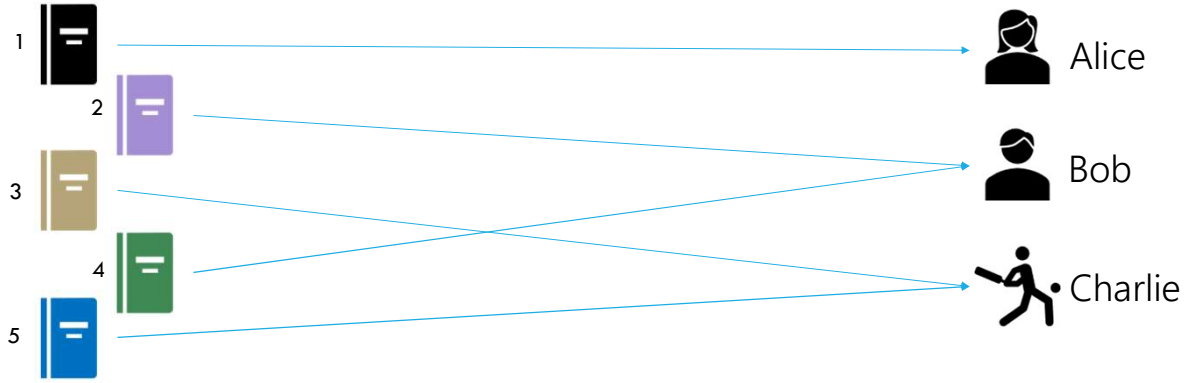
Assigning Books

We have 5 books to split to 3 people (Alice, Bob, and Charlie)

Every book goes to exactly one person, but each person could end up with no books (or all of them, or something in between).



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More sequence practice

How many length 3 sequences are there consisting of distinct elements of {1,2,3}.

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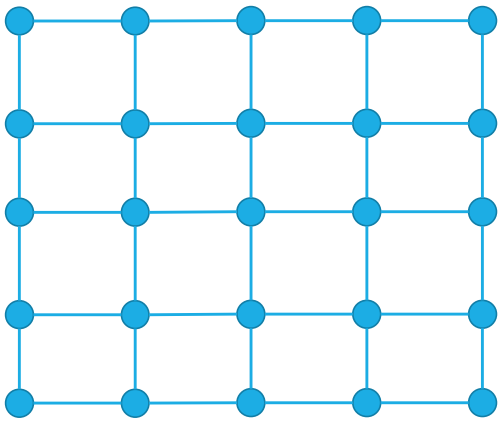
Path Counting



We're in the lower-left corner, and want to get to the upper-right corner.

We're only going to go right and up.

How many different paths are there?

$A. 2^8$
$B. P(8,4)$
$C. \binom{8}{4}$
D. Something else

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k-permutation

The number of k-element sequences of distinct symbols from a universe of n symbols is:

$$P(n,k) = n \cdot (n-1) \cdots (n-k+1) = \frac{n!}{(n-k)!}$$

k-combination

The number of k-element subsets from a set of n symbols is:

$$C(n,k) = \frac{P(n,k)}{k!} = \frac{n!}{k!\,(n-k)!}$$

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