

Antal sätt att placera ABCDE på 2 platser:

Permutationer med återläggning

AA BA CA DA EA
AB BB CB DB EB
AC BC CC DC EC
AD BD CD DD ED
AE BE CE DE EE

$$n^k = 5^2 = \underline{25}$$

Permutationer utan återläggning

~~AA~~ BA CA DA EA
AB ~~BB~~ CB DB EB
AC BC ~~CC~~ DC EC
AD BD CD ~~DD~~ ED
AE BE CE DE ~~EE~~

$$P(n, k) = \frac{n!}{(n-k)!} = \frac{5!}{(5-2)!} = \underline{20}$$

Kombinationer med återläggning

AA ~~BA~~ ~~CA~~ ~~DA~~ ~~EA~~
AB BB ~~CB~~ ~~DB~~ ~~EB~~
AC BC CC ~~DC~~ ~~EC~~
AD BD CD ~~DD~~ ~~ED~~
AE BE CE DE EE

$$C(n+k-1, k) = \frac{(n+k-1)!}{k! (n-1)!} = \frac{6!}{2 \cdot 4!} = \underline{15}$$

Kombinationer utan återläggning

~~AA~~ ~~BA~~ ~~CA~~ ~~DA~~ ~~EA~~
AB ~~BB~~ ~~CB~~ ~~DB~~ ~~EB~~
AC BC ~~CC~~ ~~DC~~ ~~EC~~
AD BD CD ~~DD~~ ~~ED~~
AE BE CE DE ~~EE~~

$$C(n, k) = \frac{n!}{k! (n-k)!} = \frac{5!}{2 \cdot 3!} = \underline{10}$$