

$$\begin{aligned}
\sum i = 1k - 1 \sum j = i + 1k B_{i,j,k} &= \sum_{i=1} k - 1 \frac{1}{k - i + 1} * (k - i) \\
&= \sum_{i=1} k - 1 \left(1 - \frac{1}{k - i + 1}\right) = k - \left(1 + \frac{1}{2} + \frac{1}{3} + \dots \frac{1}{k}\right) \\
&= k - H_k
\end{aligned}$$

$$\begin{aligned}
\sum_{i=k} n - 1 \sum_{j=i+1} n B_{i,j,k} &= \sum_{j=k+1} n \sum_{i=k} j - 1 B_{i,j,k} \\
&= \sum_{j=k+1} n \frac{j - k + 1}{*} (j - k) \\
&= \sum_{j=k+1} n \left(1 - \frac{1}{j - k + 1}\right) \\
&= n - (k + 1) - \left(1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n - k + 1}\right) \\
&= n - (k + 1) - H_{n-k+1}
\end{aligned}$$

$$\sum i = 1k - 1 \sum j = k + 1n = ?$$