Floyd-Warshall Algorithm

P is a shortest path P from v_i to v_j with $MAX(P) = K$.
We write P as the concatenation of P_1 from v_i to v_K and P_2 from v_K to v_j.
Note that $MAX(P_1) \leq K - 1$ and $MAX(P_2) \leq K - 1$.
Hence,

- $Cost(P_1) = M[i, K, K - 1]$
- $Cost(P_2) = M[K, j, K - 1]$
- $Cost(P) = M[i, K, K - 1] + M[K, j, K - 1]$.