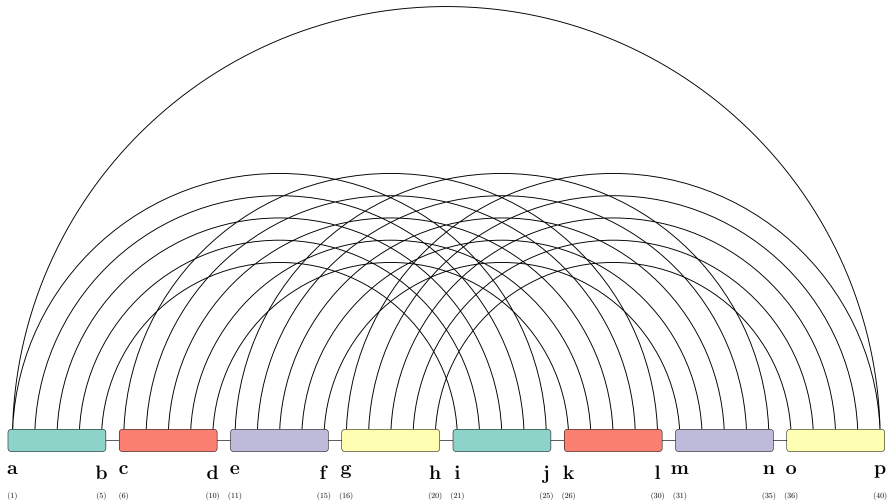
fatgraph name: K4



first and last anchors, already given: a, p

$$A'\,[p,g \mid a,f] = \min \begin{cases} A'[p,g-1 \mid a,f], & \text{if } g-1, \notin \{p,a,f\} \\ A\,[p+1,g-1 \mid a,f] + \Delta G(p,g) & \text{if } \{p+1,g-1\} \cap \{a,f\} = \emptyset \end{cases}$$

$$A\,[p,g \mid a,f] = \min \begin{cases} A\,[p+1,g \mid a,f], & \text{if } p+1 \notin \{g,a,f\} \\ A'[p,g-1 \mid a,f], & \text{if } g-1, \notin \{p,a,f\} \\ A\,[p+1,g-1 \mid a,f] + \Delta G(p,g) & \text{if } \{p+1,g-1\} \cap \{a,f\} = \emptyset, \\ B[f,g,a,p] & \end{cases}$$

$$B\,[a,f,h,o] = \min_{n} \left(C[f,h,a,n]\right)$$

$$C\,[a,f,h,n] = \min_{e,m} \left(D[m,h,a,e] + C_{\boxtimes}\,[e,f,m,n]\right)$$

$$D\,[a,e,h,m] = \min_{c,j} \left(E[c,m,j,e] + H[c,j,h,a]\right)$$

$$E\,[c,e,j,m] = \min_{l} \left(F[c,j,l,e]\right)$$

$$F\,[c,e,j,l] = \min_{d} \left(G[c,j,l,d]\right)$$

$$G\,[c,d,j,l] = \min_{k} \left(C_{\boxtimes}\,[c,d,k,l]\right)$$

$$H\,[a,c,h,j] = \min_{i} \left(I[c,j,i,a]\right)$$

$$I\,[a,c,i,j] = \min_{b} \left(C_{\boxtimes}\,[a,b,i,j]\right)$$