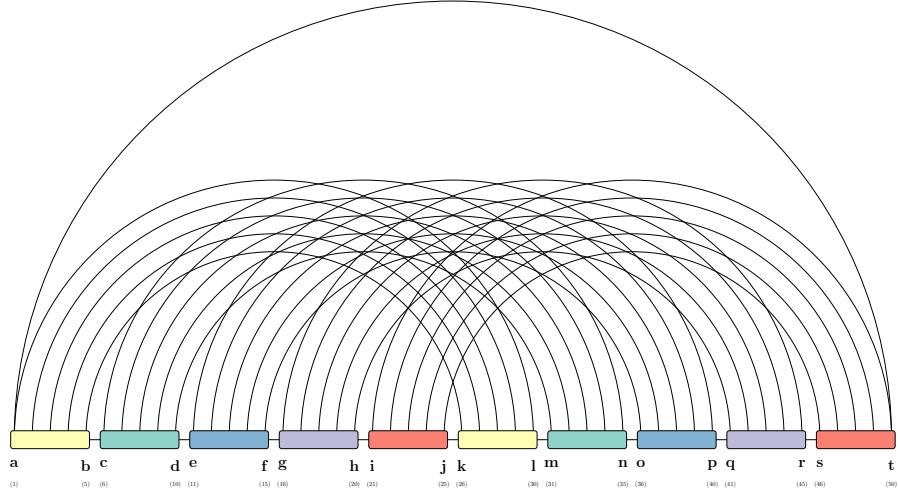


fatgraph name: K5



first and last anchors, already given:  $a, t$

$$A = \min_{i,j,r} (B[r, j, a, i] + K[t, r, j, i])$$

$$B[a, i, j, r] = \min_h (C[h, r, j, a])$$

$$C[a, h, j, r] = \min_{g,q} (D[q, j, g, a] + C_{\boxtimes}[g, h, q, r])$$

$$D[a, g, j, q] = \min_{c,l} (E[c, g, q, l] + J[a, l \mid c, j])$$

$$E[c, g, l, q] = \min_{d,n} (F[c, n, d, l] + G[n, d, g, q])$$

$$F[c, d, l, n] = \min_m (C_{\boxtimes}[c, d, m, n])$$

$$G[d, g, n, q] = \min_p (H[n, d, g, p])$$

$$H[d, g, n, p] = \min_e (I[p, e \mid n, g])$$

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

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

$$\begin{aligned}
J' [a, l \mid c, j] &= \min \begin{cases} J' [a, l-1 \mid c, j], & \text{if } l-1, \notin \{a, c, j\} \\ J [a+1, l-1 \mid c, j] + \Delta G(a, l) & \text{if } \{a+1, l-1\} \cap \{c, j\} = \emptyset \end{cases} \\
J [a, l \mid c, j] &= \min \begin{cases} J [a+1, l \mid c, j], & \text{if } a+1 \notin \{l, c, j\} \\ J' [a, l-1 \mid c, j], & \text{if } l-1, \notin \{a, c, j\} \\ J [a+1, l-1 \mid c, j] + \Delta G(a, l) & \text{if } \{a+1, l-1\} \cap \{c, j\} = \emptyset \end{cases} \\
K [i, j, r, t] &= \min_s \left( C_{\boxtimes} [i, j, s, t] \right)
\end{aligned}$$

