a   b   c   d   e   f   g   h   i   j   k   l

(1)   (5) (6)   (10) (11)   (15) (16)   (20) (21)   (25) (26)   (30)

fatgraph name: K

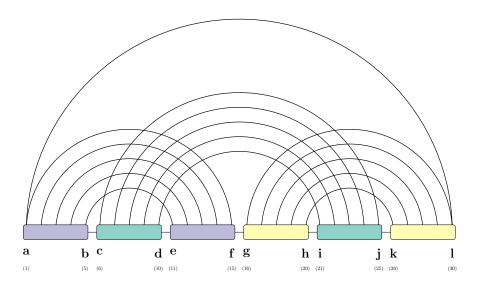| a	b	c	d	e	f	g	h	i	j	k	l
(1)	(5)	(6)	(10)	(11)	(15)	(16)	(20)	(21)	(25)	(26)	(30)

first and last anchors, already given: a, l

$$A = \min_{f,h,k} \left(B[a,f,k,h] + G[f,k,h,l] \right)$$

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

$$C\left[a,f,i,k\right] = \min_{j} \left(\boxed{D}\left[a,f \mid i,j\right] \right)$$

$$\boxed{D}^{'}\left[a,f \mid i,j\right] = \min \begin{cases} \boxed{D}^{'}[a,f-1 \mid i,j], & \text{if } f-1, \notin \{a,i,j\} \\ \boxed{D}[a+1,f-1 \mid i,j] + \Delta G(a,f) & \text{if } \{a+1,f-1\} \cap \{i,j\} = \emptyset \end{cases}$$

$$\boxed{D}\left[a,f \mid i,j\right] = \min \begin{cases} \boxed{D}[a+1,f \mid i,j], & \text{if } a+1 \notin \{f,i,j\} \\ \boxed{D}^{'}[a,f-1 \mid i,j], & \text{if } f-1, \notin \{a,i,j\} \\ \boxed{D}[a+1,f-1 \mid i,j] + \Delta G(a,f) & \text{if } \{a+1,f-1\} \cap \{i,j\} = \emptyset, \\ E[f,a,i,j] \end{cases}$$

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

$$F\left[c,e,i,j\right] = \min_{d} \left(\boxed{C_{\boxtimes}}\left[c,d,i,j\right] \right)$$

$$G\left[f,h,k,l\right] = \min_{g} \left(\boxed{C_{\boxtimes}}\left[g,h,k,l\right] \right)$$

1

```
                    1 15 20 26 30

      15 16 20 26 30              1 15 20 21 26

  H1 (16-20-26-30) (clique)          1 15 21 25 26

      17 16 30                  H2 (1-5-11-15) (diag)
      20 26
                                     15 2 1
      17 29 30                        21 25
      20 26
                                    14 15 2
      17 29 18                        21 25
      20 26
                                    14 3 2
      18 29 28                        21 25
      20 26
                                    14 3 13
      18 28 19                        21 25
      20 26
                                    4 3 13
      28 27 19                        21 25
      20 26
                                    4 12 13
                                     21 25

                                    4 12 5
                                     21 25

                                    5 12 11
                                     21 25

                                  11 21 25 5 6

                                  10 11 21 25 6

                               H0 (6-10-21-25) (clique)

                                    6 7 25
                                    10 21

                                    24 7 25
                                    10 21

                                    24 7 8
                                    10 21

                                    24 8 23
                                    10 21

                                    9 8 23
                                    10 21

                                    22 9 23
                                    10 21
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                    -1

          A  1  15  20  26

    H 15 16 20 26         B 1 15 20 21

H1 (16-20-26-30) (diag)      C 1 15 21 25

        I 20 26         H2 (1-5-11-15) (diag)
        20 26
                              D 15 1
        16 30                    21
        20 26
                               5 11
                                21

                        E 11 21 25  5

                        F 10 11 21 25

                     H0 (6-10-21-25) (diag)

                          G 21 10
                         6 21 25 10

                         6 10 21 25
```