

Date	No
$\delta_k = \sum_{i=1}^k C[x_i, x_{i+1}]$	
$x_1 = 1, k > 2$	
$q_k = \delta_k + (n-k+1) C_{\min}$	
$(\min = 3, n = 6)$	
	$F_{opt} = +\infty$
$k=2$	$(1, 2) \quad (1, 3) \quad (1, 4) \quad (1, 5) \quad (1, 6)$
	$\delta_2 = 3, q_2 = 18$
$k=3$	$(1, 2, 3)$
	$\delta_3 = 80, q_3 = 92$
$k=n$	$(1, 2, 3, 4) \quad (1, 2, 3, 5) \quad (1, 2, 3, 6)$
	$\delta_4 = 116, q_4 = 125 \quad \delta_4 = 96, q_4 = 105 \quad \delta_4 = 108, q_4 = 117$
$= 5$	$(1, 2, 3, 4, 5) \quad (1, 2, 3, 4, 6) \quad (1, 2, 3, 5, 4) \quad (1, 2, 3, 5, 6) \quad (1, 2, 3, 6, 4) \quad (1, 2, 3, 6, 5)$
	$\delta_5 = 149, q_5 = 155 \quad \delta_5 = 123, q_5 = 129 \quad \delta_5 = 129, q_5 = 135 \quad \delta_5 = 121, q_5 = 127 \quad \delta_5 = 125, q_5 = 120 \quad \delta_5 = 120, q_5 = 117$
	$> F_{opt} \quad > F_{opt}$
	$(1, 2, 3, 4, 5, 6, 1) \quad (1, 2, 3, 4, 6, 5, 1) \quad (1, 2, 3, 5, 4, 6, 1) \quad (1, 2, 3, 5, 6, 4, 1)$
	$f(x) = 177 \Rightarrow F_{opt} \quad f(x) = 243 \Rightarrow F_{opt} \quad f(x) = 139 \Rightarrow F_{opt} \quad f(x) = 206 \Rightarrow F_{opt}$

Date

No

K=3

 $(1, 2, 5)$ 

$$\delta_3 = 43, g_3 = 55$$

K=4

 $(1, 2, 5, 3)$ 

$$\delta_4 = 75, g_4 = 84$$

 $(1, 2, 5, 7)$ 

$$\delta_4 = 46, g_4 = 55$$

 $(1, 2, 5, 6)$ 

K=

K=5

 $(1, 2, 5, 3, 4)$ 

$$\delta_5 = 179, g_5 = 115$$

 $(1, 2, 5, 3, 6)$ 

$$\delta_5 = 100, g_5 = 106$$

 $(1, 2, 5, 4, 3)$ 

$$\delta_5 = 79, g_5 = 85$$

 $(1, 2, 5, 4, 6)$ 

$$\delta_5 = 80, g_5 = 86$$

$$> F_{opt} = 119$$

 $(1, 2, 5, 3, 6, 4)$ 

$$f(x) = 143 > F_{opt} = 119$$

 $(1, 2, 5, 4, 3, 1)$ 

$$f(x) = 122 > F_{opt}$$

 $(1, 2, 5, 4, 6, 3)$ 

$$f(x) = 127 > F_{opt}$$

K=6

 $(1, 2, 5, 6)$ 

$$\delta_6 = 46, g_6 = 75$$

K=5

 $(1, 2, 5, 6, 3)$ 

$$\delta_5 = 79, g_5 = 85$$

 $(1, 2, 5, 6, 4)$ 

$$\delta_5 = 94, g_5 = 100$$

 $(1, 2, 5, 6, 3, 4)$ 

$$f(x) = 119$$

 $(1, 2, 5, 6, 4, 3)$ 

$$f(x) = 161 > F_{opt}$$

$k=3$

Date	No
	$(1, 2, 6)$ $S_3 = 43, g_3 = 55$
$k=4$	$(1, 2, 6, 3)$ $S_4 = 56, g_4 = 65$
	$(1, 2, 6, 4)$ $S_4 = 71, g_4 = 80$
	$(1, 2, 6, 5)$ $S_4 = 75, g_4 = 84$
$k=5$	$(1, 2, 6, 3, 4)$ $S_5 = 81, g_4 = 87$
	$(1, 2, 6, 3, 5)$ $S_5 = 110, g_5 = 116$
	$(1, 2, 6, 4, 3)$ $S_5 = 104, g_5 = 110$
	$(1, 2, 6, 4, 5)$ $S_5 = 121, g_5 = 126$
	$(1, 2, 6, 5, 3)$ $S_5 = 107, g_5 = 113$
	$(1, 2, 6, 5, 4)$ $S_5 = 78, g_5 = 84$
	$> F_{opt}$

$k=3$

	$(1, 3, 2)$ $S_3 = 18, g_3 = 30$
$k=4$	$(1, 3, 2, 4)$ $S_4 = 25, g_4 = 34$
	$(1, 3, 2, 5)$ $S_4 = 30, g_4 = 39$
	$(1, 3, 2, 6)$ $S_4 = 30, g_4 = 39$
$k=5$	$(1, 3, 2, 4, 5)$ $S_5 = 75, g_5 = 81$
	$(1, 3, 2, 4, 6)$ $S_5 = 65, g_5 = 71$
	$(1, 3, 2, 5, 4)$ $S_5 = 33, g_5 = 39$
	$(1, 3, 2, 5, 6)$ $S_5 = 53, g_5 = 59$
	$(1, 3, 2, 6, 4)$ $S_5 = 58, g_5 = 64$
	$(1, 3, 2, 6, 5)$ $S_5 = 51, g_5 = 56$
	$f(x) = 116$
	$f(x) = 101$
	$f(x) = 91$
	$f(x) = 96$
	$f(x) = 124$
	$f(x) = 69$
	$\Rightarrow F_{opt} = 116$
	$\Rightarrow F_{opt} = 102$
	$\Rightarrow F_{opt} = 91$
	$> F_{opt}$
	$> F_{opt}$
	$\Rightarrow F_{opt} = 69$

	Date	No	
$K=3$		(1, 3, 4, 1) $\delta_3 = 90, g_3 = 52$	
$K=4$	(1, 3, 4, 2) $\delta_4 = 60, g_4 = 69$ = $F_{opt}$	(1, 3, 4, 5) $\delta_4 = 90, g_4 = 99$ $> F_{opt}$	(1, 3, 4, 6) $\delta_4 = 80, g_4 = 89$ $> F_{opt}$
$K=5$		(1, 3, 5) $\delta_3 = 69, g_3 = 81$ $> F_{opt}$	(1, 3, 6) $\delta_3 = 40, g_3 = 52$
$K=6$	(1, 3, 6, 2) $\delta_4 = 60, g_4 = 69$ = $F_{opt}$	(1, 3, 6, 4) $\delta_4 = 68, g_4 = 77$ $> F_{opt}$	(1, 3, 6, 5) $\delta_4 = 61, g_4 = 76$ $> F_{opt}$
$K=7$		(1, 4) $\delta_2 = 23, g_2 = 38$	
$K=8$	(1, 4, 2) $\delta_3 = 43, g_3 = 55$	(1, 4, 3) $\delta_3 = 56, g_3 = 68$	(1, 4, 5)
$K=9$	(1, 4, 2, 3) $\delta_4 = 67, g_4 = 76$ $> F_{opt}$	(1, 4, 2, 5) $\delta_4 = 55, g_4 = 64$	(1, 4, 2, 6) $\delta_4 = 55, g_4 = 64$
$K=10$	(1, 4, 2, 6, 7) $\delta_5 = 68, g_5 = 74$ $> F_{opt}$	(1, 4, 2, 6, 5) $\delta_5 = 110, g_5 = 119$ $> F_{opt}$	(1, 4, 3, 6) $\delta_4 = 81, g_4 = 89$ $> F_{opt}$
$K=11$	(1, 4, 2, 5, 3) $\delta_5 = 87, g_5 = 93$ $> F_{opt}$	(1, 4, 2, 5, 6) $\delta_5 = 78, g_5 = 84$ $> F_{opt}$	(1, 4, 2, 6, 3) $\delta_5 = 68, g_5 = 74$ $> F_{opt}$
$K=12$	(1, 4, 2, 6, 5) $\delta_5 = 76, g_5 = 82$ $> F_{opt}$		

Date No

$K=1$

(1, 4, 5)

$$\delta_3 = 73, g_6 = 85 \\ > F_{opt}$$

(1, 4, 6)

$$\delta_3 = 64, g_6 = 75 \\ > F_{opt} = 69$$

$K=2$

(1, 5)

$$\delta_2 = 10, g_2 = 75$$

$K=3$

(1, 5, 2)

$$\delta_2 = 20, g_3 = 32$$

(1, 5, 3)

(1, 5, 4)

(1, 5, 6)

$K=4$

(1, 5, 2, 3)

$$\delta_3 = 44, g_4 = 53$$

(1, 5, 2, 4)

$$\delta_4 = 27, g_6 = 36$$

(1, 5, 2, 6)

$$\delta_6 = 32, g_6 = 91$$

$K=5$

(1, 5, 2, 3, 4)

$$\delta_5 = 69, g_5 = 75$$

$$> F_{opt}$$

(1, 5, 2, 3, 6)

$$\delta_5 = 69, g_5 = 75$$

$$> F_{opt}$$

(1, 5, 2, 4, 3)

$$\delta_5 = 60, g_5 = 66$$

$$> F_{opt}$$

(1, 5, 2, 4, 6)

$$\delta_6 = 67, g_5 = 73$$

$$> F_{opt}$$

(1, 5, 2, 6, 3)

$$\delta_5 = 45, g_5 = 51$$

$$> F_{opt}$$

(1, 5, 2, 6, 4)

$$\delta_5 = 60, g_5 = 66$$

(1, 5, 2, 4, 3, 6, 1)

$$f(x) = 103 > F_{opt}$$

(1, 5, 2, 6, 3, 4, 1)

$$f(x) = 85 > F_{opt}$$

(1, 5, 2, 6, 4, 3, 1)

$$f(x) = 117 > F_{opt}$$

	Date	No	
$K=3$		$(1, 5, 3)$ $\delta_3 = 62, 9_3 = 59$	
$K=4$	$(1, 5, 3, 2)$ $\delta_4 = 45, 9_4 = 54$	$(1, 5, 3, 4)$ $\delta_4 = 67, 9_4 = 76$ $> F_{opt}$	$(1, 5, 3, 6)$ $\delta_4 = 69, 9_4 = 76$ $> F_{opt}$
$K=5$	$(1, 5, 3, 2, 4)$ $\delta_5 = 52, 9_5 = 58$	$(1, 5, 3, 2, 6)$ $\delta_5 = 57, 9_5 = 63$	
	$(1, 5, 3, 2, 4, 6, 1)$ $f(x) = 110 > F_{opt}$	$(1, 5, 3, 2, 6, 4, 1)$ $f(x) = 100 > F_{opt}$	
$K=3$		$(1, 5, 4)$ $\delta_3 = 13, 9_3 = 25$	
$K=4$	$(1, 5, 4, 2)$ $\delta_4 = 33, 9_4 = 45$	$(1, 5, 4, 3)$ $\delta_4 = 46, 9_4 = 58$	$(1, 5, 4, 6)$ $\delta_4 = 53, 9_4 = 62$
$K=5$	$(1, 5, 4, 2, 3)$ $\delta_5 = 57, 9_5 = 63$	$(1, 5, 4, 2, 6)$ $\delta_5 = 95, 9_5 = 51$	$(1, 5, 4, 3, 2)$ $\delta_5 = 49, 9_5 = 55$
	$(1, 5, 4, 3, 6)$ $f(x) = 71, 9_5 = 77 > F_{opt}$	$(1, 5, 4, 3, 6)$ $f(x) = 73, 9_5 = 79 > F_{opt}$	$(1, 5, 4, 6, 2)$ $f(x) = 74, 9_5 = 80 > F_{opt}$
	$(1, 5, 4, 2, 3, 6, 1)$ $f(x) = 100 > F_{opt}$	$(1, 5, 4, 2, 6, 3, 1)$ $f(x) = 76 > F_{opt}$	$(1, 5, 4, 3, 2, 6, 1)$ $f(x) = 79 > F_{opt}$

Date

No

 $k=3$  $(1, 5, 6)$ 

$$\delta_3 = 33, q_3 = 45$$

 $k=4$  $(1, 5, 6, 2)$ 

$$\delta_4 = 53, q_4 = 62$$

 $(1, 5, 6, 3)$ 

$$\delta_4 = 46, q_4 = 55$$

 $(1, 5, 6, 4)$ 

$$\delta_4 = 61, q_4 = 70$$

 $> F_{opt}$  $k=5$  $(1, 5, 6, 2, 3)$ 

$$\delta_5 = 77$$

 $> F_{opt}$  $(1, 5, 6, 2, 4)$ 

$$\delta_5 = 60, q_5 = 66$$

 $> F_{opt}$  $(1, 5, 6, 3, 2)$ 

$$\delta_5 = 49, q_5 = 55$$

 $> F_{opt}$  $(1, 5, 6, 3, 4)$ 

$$\delta_5 = 71$$

 $(1, 5, 6, 2, 4, 3, 1)$ 

$$f(x) = 177 > F_{opt}$$

 $k=3$  $(1, 6, 2)$ 

$$\delta_3 = 37, q_3 = 49$$

 $k=4$  $(1, 6, 2, 3)$ 

$$\delta_4 = 61, q_4 = 70$$

 $> F_{opt}$  $(1, 6, 2, 4)$ 

$$\delta_4 = 44, q_4 = 53$$

 $(1, 6, 2, 5)$ 

$$\delta_4 = 49, q_4 = 58$$

 $k=5$  $(1, 6, 2, 4, 3)$ 

$$\delta_5 = 77$$

 $> F_{opt}$  $(1, 6, 2, 4, 5)$ 

$$\delta_5 = 94$$

 $> F_{opt}$  $(1, 6, 2, 5, 3)$ 

$$\delta_5 = 81$$

 $> F_{opt}$  $(1, 6, 2, 5, 4)$ 

$$\delta_5 = 82, q_5 = 58$$

 $(1, 6, 2, 3, 4, 3, 1)$ 

$$f(x) = 119 > F_{opt}$$

	Date	No	
$k=3$		$(1, 6, 3)$ $\delta_3 = 30, q_3 = 42$	
$k=4$	$(1, 6, 3, 4)$ $\delta_4 = 33, q_4 = 39$	$(1, 6, 3, 4)$ $\delta_4 = 55, q_4 = 61$	$(1, 6, 3, 5)$ $\delta_4 = 84$ $> F_{opt}$
$k=5$	$(1, 6, 3, 2, 4)$ $\delta_5 = 40, q_5 = 46$	$(1, 6, 3, 2, 5)$ $\delta_5 = 45, q_5 = 51$	$(1, 6, 3, 4, 2)$ $\delta_5 = 75$ $> F_{opt}$
	$(1, 6, 3, 2, 4, 5, 1)$ $f(x) = 106$	$(1, 6, 3, 2, 5, 4, 1)$ $f(x) = 63$	$(1, 6, 3, 4, 5)$ $\delta_5 = 105$ $> F_{opt}$

$> F_{opt} \Rightarrow F_{opt} = 63$

	No	
$k=3$	$(1, 6, 4)$ $\delta_3 = 45, q_3 = 57$	
$k=4$	$(1, 6, 4, 2)$ $\delta_4 = 65$ $> F_{opt}$	$(1, 6, 4, 3)$ $\delta_4 = 78$ $> F_{opt}$
$k=5$		$(1, 6, 4, 5)$ $\delta_4 = 95$ $> F_{opt}$

$K=3$

Date No

(1, 6, 5)

$$\delta_3 = 38, q_3 = 56$$

$K=4$

(1, 6, 5, 2)

$$\delta_4 = 48, q_4 = 57$$

(1, 6, 5, 3)

$$\delta_4 = 76$$

(1, 6, 5, 4)

$$\delta_4 = 41, q_4 = 50$$

>  $F_{opt}$

$K=5$

(1, 6, 5, 2, 3)

$$\delta_5 = 72$$

>  $F_{opt}$

(1, 6, 5, 2, 4)

$$\delta_5 = 55, q_5 = 61$$

|

(1, 6, 5, 4, 2)

$$\delta_5 = 61, q_5 = 67$$

>  $F_{opt}$

(1, 6, 5, 4, 3)

$$\delta_5 = 74$$

>  $F_{opt}$

(1, 6, 5, 2, 4, 3, 1)

$$f(x) = 122 > F_{opt}$$

$$\Rightarrow F_{opt} = 63, \text{ opt. } (1, 6, 3, 2, 5, 4, 1)$$