

## List of full sensitivity spaced seeds for at most 9 mismatches

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Each spaced seed  $s$  is a periodic seed ( $b$  is a periodic block). It consists of  $n_b$  repetitions of the block and first  $n_d$  symbols of the blocks. Other parameters:  $w$  is the weight of the periodic seed,  $n_m$  is the maximum number of mismatches allowed to achieve the full sensitivity,  $L_{min}$  is the minimum length of a read required for the found seed.

We used the following selection criteria:

- by setting  $n_m$  and the length  $L$  of a read, we found all seeds of a maximum weight  $w$ ;
- for a given weight  $w$  we found the shortest length  $L_{min}$  of reads when we are able to find seeds;
- among all seeds found for  $n_m$ ,  $w$  and  $L_{min}$ , we used only seeds of maximum length.

If a seed  $s$  is found, then its reverse version  $\bar{s}$  (all digits are in the reverse order) can also be used. To form the seeds below lists of seed blocks  $b$  were used. Those blocks were found for sizes from 10 to 50 for  $n_m = 3, 4, \dots, 9$  and from 10 to 70 for  $n_m = 2$ . For each block size only sequences of maximum weight were used. There is a possibility that in a future longer seed blocks can be found and new spaced seeds can be formed for a given weight  $w$  (it will be possible to use them for shorter reads, i.e.  $L_{min}$  will be smaller).

- [illegible]



- 24)  $n_m = 9, w = 25, L_{min} = 154, n_b = 2, n_d = 17,$   
 $b = 10100010001010101000000000010000000100000000,$   
 $s = 1010001000101010100000000001000000010000000010100010001010101000000000010000000100000000010$   
 $100010001010101$
- 25)  $n_m = 9, w = 25, L_{min} = 154, n_b = 2, n_d = 17,$   
 $b = 1010101010000010100000000000001000100000000000,$   
 $s = 10101010100000101000000000000010001000000000010101010100000101000000000000010001000000000010$   
 $101010100000101$
- 26)  $n_m = 9, w = 26, L_{min} = 156, n_b = 2, n_d = 19,$   
 $b = 101000100010101010100000000000000000000010000000,$   
 $s = 10100010001010101010000000000000000000001000000010100010001010101010000000000000000000000010$   
 $10001000101010101$
- 27)  $n_m = 9, w = 27, L_{min} = 162, n_b = 3, n_d = 3,$   
 $b = 11100000000010000000001100000001010000000,$   
 $s = 111000000000100000000011000000010100000001110000000001000000001100000000101000000011100000000010$   
 $00000001100000001010000000111$
- 28)  $n_m = 9, w = 27, L_{min} = 162, n_b = 3, n_d = 3,$   
 $b = 111000000010100000000011000000000100000000,$   
 $s = 111000000010100000000011000000000100000000111000000001010000000011000000000100000000111000000001010$   
 $00000001100000000010000000111$
- 29)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 1000000011100000000010000000011000000010,$   
 $s = 10000000111000000000100000000110000000101000000011100000000010000000011000000001010000000111000$   
 $00000010000000001100000001010000000111$
- 30)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 10000000111000000001010000000011000000000,$   
 $s = 10000000111000000001010000000011000000000100000001110000000010100000000110000000010000000111000$   
 $000010100000000110000000010000000111$
- 31)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 1110000000101000000001100000000010000000,$   
 $s = 11100000001010000000011000000000100000001110000000101000000001100000000010000000111000000001010$   
 $0000000110000000001000000011100000001$
- 32)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 100000101010000000000100000000101000001000,$   
 $s = 1000001010100000000001000000001010000010001000000101010000000001000000010100000100010000010101000$   
 $00000010000000010100000100010000010101$
- 33)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 101000100010100000000001000100000100000000,$   
 $s = 1010001000101000000000010001000001000000001010001000101000000000100010000010000000010100010001010$   
 $00000000100010000010000000010100010001$
- 34)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 10001000101000000000010001000001000000010,$   
 $s = 100010001010000000000100010000010000000010100010001010000000001000100000100000001010001000101000$   
 $00000010001000001000000001010001000101$
- 35)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 10000010101000001000100000000101000000000,$   
 $s = 1000001010100000100010000000010100000000010000010101000001000100000001010000000010000010101000$   
 $00100010000000010100000000010000010101$
- 36)  $n_m = 9, w = 28, L_{min} = 170, n_b = 3, n_d = 11,$   
 $b = 10101000001000100000000101000000000100000,$   
 $s = 101010000010001000000001010000000001000001010100000100010000000010100000000010000010101000001000$   
 $1000000010100000000010000010101000001$

- 4

- 50)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 1000001010100000100010000000101000000000,$   
 $s = 10000010101000001000100000001010000000001000100000100010000000100000000010000010101000$   
 $0010001000000010100000000100000101010000010001$
- 51)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 1001000100000100010010010000000001000000,$   
 $s = 1001000100000100010010010000000001000000100100010000010001001001000000000100000010010001000001$   
 $00010010010000000001000000100100010000010001001$
- 52)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 10001000001000100100100000000001000000100,$   
 $s = 10001000001000100100100000000001000000100100010000010001001001000000000100000010010001000001000$   
 $100100100000000001000000100100010000010001001001$
- 53)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000100100000000010001001001000$   
 $10000010000001001000000000100010010010001000001$
- 54)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 10001010000000010100010001000000000100000,$   
 $s = 10001010000000010100010001000000000100000100010100000001010001000100000000010000010001010000000$   
 $101000100010000000000100000100010100000001010001$
- 55)  $n_m = 9, w = 30, L_{min} = 180, n_b = 3, n_d = 21,$   
 $b = 10100000000101000100010000000001000001000,$   
 $s = 10100000000101000100010000000001000001000101000000010100010001000000000100000100010100000001010$   
 $001000100000000001000001000101000000010100010001$
- 56)  $n_m = 9, w = 31, L_{min} = 181, n_b = 3, n_d = 22,$   
 $b = 110000000010100000000111000000000100000000,$   
 $s = 11000000001010000000011100000000010000000011000000001010000000011100000000010000000011000000010100$   
 $000001110000000001000000001100000001010000000111$
- 57)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000000000110000000010100000000111000000000,$   
 $s = 100000000011000000001010000000011100000000010000000011000000001010000000011100000000010000000011000$   
 $0000101000000001110000000001000000001100000001010000000111$
- 58)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000000001110000000010100000000011000000000,$   
 $s = 1000000001110000000010100000000011000000000100000000111000000001010000000011000000000100000000111000$   
 $00001010000000001100000000010000000011100000001010000000011$
- 59)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000000001010000010001000000101010000000000,$   
 $s = 10000000010100000100010000001010100000000001000000001010000001000100000010101000000000010000000101000$   
 $00100010000001010100000000010000000101000001000100000000010000000001000000010101$
- 60)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 10001000001000000001010001000101000000000,$   
 $s = 10001000001000000001010001000101000000000010001000001000000001010001000101000000000100010000001000$   
 $000010100010001010000000001000100000100000001010001000101$
- 61)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 10000010101000001000100000000101000000000,$   
 $s = 10000010101000001000100000000101000000000100000101010000010001000000010100000000010000010101000$   
 $001000100000000101000000000100000101010000010001000000000100000000010000010101000$
- 62)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000000100100010000010001001001000000000,$   
 $s = 100000010010001000001000100100100000000010000001001000100000000010000001001000$   
 $100000100010010010000000001000000100100010000010001001001$

- 63)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 100010010010001000001000000100100000000010001001001000100000100000010010000000010001001001000$   
 $100000100000010010000000001000100100100010000010000001001$
- 64)  $n_m = 9, w = 32, L_{min} = 190, n_b = 3, n_d = 31,$   
 $b = 1000001000101000000010100010001000000000,$   
 $s = 100000100010100000001010001000100000000010000010001010000000101000100010000000010000010001010$   
 $000000101000100010000000001000001000101000000010100010001$
- 65)  $n_m = 9, w = 33, L_{min} = 195, n_b = 3, n_d = 16,$   
 $b = 100010000110001100000000010000100000000010000,$   
 $s = 1000100001100011000000000100001000000000100001000100001100011000000000100001000000000100001000$   
 $100001100011000000000100001000000000100001000100001100011$
- 66)  $n_m = 9, w = 33, L_{min} = 195, n_b = 3, n_d = 16,$   
 $b = 100100001010010100000000010000100000000010000,$   
 $s = 1001000010100101000000000100001000000000100001001000010100101000000000100001000000000100001001$   
 $000010100101000000000100001000000000100001001000010100101$
- 67)  $n_m = 9, w = 33, L_{min} = 195, n_b = 3, n_d = 16,$   
 $b = 101000010010100100000000010000100000000010000,$   
 $s = 1010000100101001000000000100001000000000100001010000100101001000000000100001000000000100001010$   
 $000100101001000000000100001000000000100001010000100101001$
- 68)  $n_m = 9, w = 33, L_{min} = 195, n_b = 3, n_d = 16,$   
 $b = 110000100011000100000000010000100000000010000,$   
 $s = 1100001000110001000000000100001000000000100001100001000110001000000000100001000000000100001100$   
 $001000110001000000000100001000000000100001100001000110001$
- 69)  $n_m = 9, w = 34, L_{min} = 200, n_b = 3, n_d = 21,$   
 $b = 100001000100001100011000000000100001000000000,$   
 $s = 1000010001000011000110000000001000010000000001000010001000011000110000000001000010000000001000$   
 $01000100001100011000000000100001000000000100001000100001100011$
- 70)  $n_m = 9, w = 34, L_{min} = 200, n_b = 3, n_d = 21,$   
 $b = 100001001000010100101000000000100001000000000,$   
 $s = 1000010010000101001010000000001000010000000001000010010000101001010000000001000010000000001000$   
 $01001000010100101000000000100001000000000100001001000010100101$
- 71)  $n_m = 9, w = 34, L_{min} = 200, n_b = 3, n_d = 21,$   
 $b = 100001010000100101001000000000100001000000000,$   
 $s = 1000010100001001010010000000001000010000000001000010100001001010010000000001000010000000001000$   
 $01010000100101001000000000100001000000000100001010000100101001$
- 72)  $n_m = 9, w = 34, L_{min} = 200, n_b = 3, n_d = 21,$   
 $b = 100001100001000110001000000000100001000000000,$   
 $s = 1000011000010001100010000000001000010000000001000011000010001100010000000001000010000000001000$   
 $01100001000110001000000000100001000000000100001100001000110001$
- 73)  $n_m = 9, w = 35, L_{min} = 202, n_b = 4, n_d = 3,$   
 $b = 111000000000100000000011000000001010000000,$   
 $s = 111000000000100000000011000000001010000000111000000000100000000110000000101000000011100000000010$   
 $000000011000000001010000000111000000001000000001100000001010000000111$
- 74)  $n_m = 9, w = 35, L_{min} = 202, n_b = 4, n_d = 3,$   
 $b = 1110000000101000000001100000000010000000,$   
 $s = 1110000000101000000001100000000010000000111000000010100000000110000000001000000011100000001010$   
 $00000001100000000010000000111000000010100000000110000000010000000111$
- 75)  $n_m = 9, w = 36, L_{min} = 210, n_b = 4, n_d = 11,$   
 $b = 1000000011100000000010000000011000000010,$   
 $s = 100000001110000000001000000001100000001010000000111000000001000000001100000001010000000111000$   
 $00000010000000001100000001010000000111000000001000000001100000001010000000111$

- 7

- 8



- 102)  $n_m = 9, w = 39, L_{min} = 221, n_b = 4, n_d = 22,$   
 $b = 1100000001010000000111000000000100000000,$   
 $s = 110000000101000000011100000000010000000011000000010100000001110000000010000000011000000010100$   
 $000001110000000001000000001100000001010000000111000000001000000001100000001010000000111$
- 103)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 100000000110000000101000000011100000000,$   
 $s = 100000000110000000101000000011100000000010000000011000000010100000001110000000010000000011000$   
 $00001010000000111000000001000000001100000001010000000111000000001000000001100000001010000000111$
- 104)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000000001110000000101000000001100000000,$   
 $s = 1000000001110000000101000000001100000000010000000111000000010100000000110000000010000000111000$   
 $0000101000000001100000000100000000111000000010100000000110000000010000000011100000001010000000011$
- 105)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 10000000010100000100010000001010100000000,$   
 $s = 100000000101000001000100000010101000000000100000001010000010001000001010100000000010000000101000$   
 $0010001000001010100000000010000000101000001000100000101010000000001000000010100000100010000010101$
- 106)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000100000100000001010001000101000000000,$   
 $s = 10001000001000000010100010001010000000001000100000100000000101000100010100000000010001000001000$   
 $0000101000100010100000000010001000001000000010100010001010000000001000100000100000001010001000101$
- 107)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000001010100000100010000000101000000000,$   
 $s = 1000001010100000100010000000101000000000100000101010000010001000000010100000000010000010101000$   
 $0010001000000010100000000010000010101000001000100000001010000000001000001010100000100010000000101$
- 108)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000000100100010000010001001001000000000,$   
 $s = 1000000100100010000010001001001000000000100000010010001000001000100100100000000010000001001000$   
 $1000001000100100100000000010000001001000100000100010010010000000001000000100100010000010001001001$
- 109)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000001000100100100010001000$   
 $1000001000000100100000000010001001001000100000100000010010000000001000100100100010000010000001001$
- 110)  $n_m = 9, w = 40, L_{min} = 230, n_b = 4, n_d = 31,$   
 $b = 1000001000101000000010100010001000000000,$   
 $s = 1000001000101000000010100010001000000000100000100010100000001010001000100000000010000010001010$   
 $0000001010001000100000000010000010001010000000101000100010000000001000001000101000000010100010001$
- 111)  $n_m = 9, w = 41, L_{min} = 235, n_b = 4, n_d = 11,$   
 $b = 1100011000100000100001000000000010000100000000,$   
 $s = 1100011000100000100001000000000010000100000000011000110001000001000010000000001000010000000001100$   
 $011000100000100001000000000010000100000000011000110001000001000010000000001000010000000011000110001$
- 112)  $n_m = 9, w = 41, L_{min} = 235, n_b = 4, n_d = 11,$   
 $b = 10100101001000000100001000000000010000100000000,$   
 $s = 1010010100100000010000100000000001000010000000010100101001000000100001000000000100001000000001010$   
 $01010010000001000010000000001000010000000010100101001000000100001000000000100001000000010100101001$
- 113)  $n_m = 9, w = 42, L_{min} = 240, n_b = 4, n_d = 16,$   
 $b = 100010000110001100000000010000100000000010000,$   
 $s = 1000100001100011000000000100001000000000100001000100001100011000000000100001000000000100001000$   
 $100001100011000000000100001000000000100001000100001100011000000000100001000000000100001000010000110$   
 $0011$
- 114)  $n_m = 9, w = 42, L_{min} = 240, n_b = 4, n_d = 16,$   
 $b = 100100001010010100000000010000100000000010000,$



- 11

00000111000000000100000000110000000101000000011100000000010000000011000000010100000001110000000001  
000000001100000001010000000111

- 136)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000000001100000001010000000111000000000,$   
 $s = 100000000110000000101000000011100000000010000000011000000010100000001110000000010000000011000$   
 $000010100000001110000000010000000011000000010100000001110000000010000000011000000010100000001110$   
 $000000001000000001100000001010000000111$
- 137)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 10000000011100000001010000000011000000000,$   
 $s = 10000000011100000001010000000011000000000100000001110000000101000000001100000000010000000111000$   
 $0000101000000001100000000100000000111000000010100000000110000000010000000111000000010100000000110$   
 $0000000010000000011100000001010000000011$
- 138)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 10000000010100000100010000010101000000000,$   
 $s = 100000000101000001000100000101010000000000100000001010000010001000001010100000000010000000101000$   
 $0010001000001010100000000010000000101000001000100000101010000000001000000101000001000100000101010$   
 $000000001000000010100000100010000010101$
- 139)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000100000100000001010001000101000000000,$   
 $s = 1000100000100000001010001000101000000000100010000010000000101000100010100000000010001000001000$   
 $00001010001000101000000000100010000010000000101000100010100000000010001000001000000010100010001010$   
 $000000001000100000100000001010001000101$
- 140)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000001010100000100010000000101000000000,$   
 $s = 1000001010100000100010000000101000000000100000101010000010001000000010100000000010000010101000$   
 $00100010000000101000000000100000101010000010001000000010100000000010000010101000001000100000001010$   
 $000000001000001010100000100010000000101$
- 141)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000000100100010000010001001001000000000,$   
 $s = 1000000100100010000010001001001000000000100000010010001000001000100100100000000010000001001000$   
 $100000100010010010000000001000000100100010000010001001001000000000100000010001000100010010010$   
 $0000000010000001001000100000100010001$
- 142)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000100100000000010001001000$   
 $10000010000001001000000000100010010010001000001000000100100000000010001001001000100000100010010$   
 $000000001000100100100010000010000001001$
- 143)  $n_m = 9, w = 48, L_{min} = 270, n_b = 5, n_d = 31,$   
 $b = 1000001000101000000010100010001000000000,$   
 $s = 1000001000101000000010100010001000000000100000100010100000001010001000100000000010000010001010$   
 $000000101000100010000000010000010001010000000101000100010000000010000010001010000000101000100010$   
 $000000001000001000101000000010100010001$
- 144)  $n_m = 9, w = 49, L_{min} = 276, n_b = 5, n_d = 7,$   
 $b = 1100011000000000010000100000000010000100010000,$   
 $s = 11000110000000000100001000000000100001000011000110000000001000010000000001000010000100001100$   
 $011000000000100001000000000100001000011000110000000001000010000000001000010000110001100000$   
 $000010000100000000010000100001000011$
- 145)  $n_m = 9, w = 49, L_{min} = 276, n_b = 5, n_d = 7,$   
 $b = 11000110000000000100001000100000100001000000000,$   
 $s = 110001100000000001000010001000001000010000000001100011000000000100001000001000010000000001100$   
 $01100000000010000100000100001000000000110001100000000010000100010000010000100000000110001100000$   
 $000010000100001000001000010000000001100011$

- 146)  $n_m = 9, w = 49, L_{min} = 276, n_b = 5, n_d = 7,$   
 $b = 110001100010000010000100000000010000100000000,$   
 $s = 11000110001000001000010000000001000010000000011000110001000001000010000000001000010000000001100$   
 $01100010000010000100000000010000100000000110001100010000010000100000000010000100000000110001100010$   
 $0000100001000000000100001000000001100011$
- 147)  $n_m = 9, w = 50, L_{min} = 280, n_b = 5, n_d = 11,$   
 $b = 110001100010000010000100000000010000100000000,$   
 $s = 11000110001000001000010000000001000010000000011000110001000001000010000000001000010000000001100$   
 $01100010000010000100000000010000100000000110001100010000010000100000000010000100000000110001100010$   
 $00001000010000000001000010000000011000110001$
- 148)  $n_m = 9, w = 50, L_{min} = 280, n_b = 5, n_d = 11,$   
 $b = 101001010010000001000010000000001000010000000,$   
 $s = 10100101001000000100001000000000100001000000010100101001000000100001000000000100001000000001010$   
 $010100100000010000100000000010000100000000101001010010000001000010000000001000010000000101001010010$   
 $000001000010000000001000010000000010100101001$
- 149)  $n_m = 9, w = 51, L_{min} = 282, n_b = 6, n_d = 3,$   
 $b = 111000000000100000000011000000001010000000,$   
 $s = 111000000000100000000011000000001010000000111000000000100000000011000000001010000000011100000000010$   
 $000000001100000000101000000001110000000001000000001100000000101000000011100000000010000000010$   
 $100000000111000000000100000000011000000001010000000111$
- 150)  $n_m = 9, w = 51, L_{min} = 282, n_b = 6, n_d = 3,$   
 $b = 1110000000010100000000011000000000100000000,$   
 $s = 1110000000010100000000011000000000100000000111000000001010000000011000000000100000000111000000001010$   
 $0000000011000000000100000000111000000001010000000011000000000100000000111000000001010000000011000000000$   
 $10000000011100000000101000000001100000000010000000111$
- 151)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1000000001110000000001000000000110000000010,$   
 $s = 100000000111000000000100000000011000000001010000000111000000000100000000110000000010100000000111000$   
 $000000100000000011000000001010000000111000000000100000000110000000010100000000111000000000100000000110$   
 $00000001010000000011100000000010000000011000000001010000000111$
- 152)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1000000001110000000010100000000011000000000,$   
 $s = 1000000001110000000010100000000011000000000100000000111000000001010000000011000000000100000000111000$   
 $0000101000000000110000000001000000001110000000010100000000110000000001000000001110000000010100000000110$   
 $000000000100000000111000000001010000000011000000000100000000111$
- 153)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 11100000000101000000000110000000000100000000,$   
 $s = 111000000001010000000001100000000001000000001110000000010100000000011000000000100000000111000000001010$   
 $0000000011000000000010000000011100000000101000000000110000000001000000001110000000010100000000011000000000$   
 $10000000011100000000101000000000110000000000100000000111000000001$
- 154)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1000001010100000000001000000001010000001000,$   
 $s = 1000001010100000000001000000001010000001000100000101010000000000100000001010000001000100000010101000$   
 $00000010000000010100000010001000000101010000000000100000001010000001000100000010101000000000100000001010$   
 $0000100010000001010100000000010000000101000001000100000010101$
- 155)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1010001000101000000000010001000000100000000,$   
 $s = 101000100010100000000001000100000010000000010100010001010000000001000100000010000000010100010001010$   
 $0000000001000100000010000000010100010001010000000001000100000010000000010100010001010000000001000100000$   
 $10000000010100010001010000000001000100000010000000010100010001$
- 156)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1000100010100000000001000100000010000000010,$   
 $s = 10001000101000000000010001000000101000100010100000000010001000001000000001010001000101000$

00000010001000001000000010100010001010000000001000100000100000001010001000101000000000100010000010  
00000010100010001010000000001000100000100000001010001000101

- 157)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 100000101010000010001000000010100000000,$   
 $s = 10000010101000001000100000001010000000010000010101000001000100000001010000000010000010101000$   
 $001000100000001010000000010000010101000001000100000001010000000010000010101000001000100000001010$   
 $0000000010000010101000001000100000001010000000010000010101$
- 158)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 10101000001000100000000101000000000100000,$   
 $s = 10101000001000100000000101000000000100000101010000010001000000001010000000010000010101000001000$   
 $1000000010100000000010000010101000001000100000001010000000010000010101000001000100000001010000000$   
 $0010000010101000001000100000001010000000010000010101000001000100000001010000001$
- 159)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 10001001001000000000010000001001000100000,$   
 $s = 100010010010000000000100000010010001000001000100100100000000010000001001000100000100010010001000$   
 $00000010000001001000100000100010010010000000001000000100100010000010001001001000000000100000010010$   
 $00100000100010010010000000001000000100100010000010001001001000000000100000010010$
- 160)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 10001001001000100000100000010010000000001000100100100010000010000001001000000000100010010001000$   
 $10000010000001001000000000100010010010001000001000000100100000000010001001001000100000100000010010$   
 $0000000010001001001000100000100000010010000000010001001001000100000100000010001001001$
- 161)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 1001001000100000100000010010000000001000,$   
 $s = 1001001000100000100000010010000000001000100100010000010000001001000000000100010010010001000$   
 $00100000010010000000001000100100100010000010000001001000000000100010010001000001000100000$   
 $00001000100100100010000010000001001000000000100010010010001$
- 162)  $n_m = 9, w = 52, L_{min} = 290, n_b = 6, n_d = 11,$   
 $b = 101000100010000000000100000010001010000000,$   
 $s = 101000100010000000000100000010001010000000101000100010000000001000001000101000000010100010001000$   
 $00000010000010001010000000101000100010000000001000001000101000000010100010001000000000100000100010$   
 $100000001010001000100000000010000010001010000000101000000010100010001$
- 163)  $n_m = 9, w = 53, L_{min} = 292, n_b = 6, n_d = 13,$   
 $b = 10100000001110000000001000000001100000000,$   
 $s = 10100000001110000000001000000001100000000101000000011100000000100000000110000000010100000001110$   
 $00000000100000000011000000001010000000111000000001000000001100000001010000000111000000001000000001$   
 $100000001010000000111000000001000000001100000001010000000111000000001000000001$
- 164)  $n_m = 9, w = 53, L_{min} = 292, n_b = 6, n_d = 13,$   
 $b = 11100000001010000000011000000000100000000,$   
 $s = 111000000010100000000110000000001000000011100000001010000000011000000001000000011100000001010$   
 $00000001100000000010000000111000000010100000001100000000100000001110000000101000000011000000000$   
 $10000000111000000010100000001100000000100000001110000000101$
- 165)  $n_m = 9, w = 53, L_{min} = 292, n_b = 6, n_d = 13,$   
 $b = 10100010001010000000001000100000100000000,$   
 $s = 10100010001010000000001000100000100000000101000100010100000000010001000001000000010100010001010$   
 $000000001000100000100000001010001000101000000000100010000010000000010100010001010000000001000100000$   
 $10000000101000100010100000000010001000001000000001010001000101$
- 166)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1100000000101000000001110000000001000000000,$   
 $s = 1100000000101000000001110000000001000000001100000000101000000011100000000010000000010100$   
 $000001110000000000100000000110000000010100000001110000000001000000001100000000101000000001110000000001$   
 $000000001100000000101000000011100000000100000000110000000101000000011$

- 167)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1000000010100000001110000000001000000001,$   
 $s = 1000000010100000001110000000001000000001100000000101000000011100000000100000000110000000101000$   
 $0000111000000000100000000110000000101000000011100000000010000000011000000010100000001110000000010$   
 $000000011000000010100000001110000000001000000001100000001010000000111$
- 168)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1000000011100000001010000000011000000000,$   
 $s = 1000000011100000001010000000011000000000100000001110000000101000000001100000000010000000111000$   
 $00001010000000011000000000100000001110000000101000000001100000000010000000111000000010100000000110$   
 $00000000100000001110000000101000000001100000000100000001110000000101$
- 169)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10100000100010000010101000000000010000000,$   
 $s = 10100000100010000010101000000000010000000101000001000100000101010000000001000000010100000100010$   
 $000010101000000000100000000101000001000100000101010000000001000000010100000100010000010101000000000$   
 $10000000101000001000100000101010000000001000000010100000100010000010001000001000100000101$
- 170)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10000010001000001010100000000001000000010,$   
 $s = 10000010001000001010100000000001000000010100000100010000010101000000000100000001010000010001000$   
 $00101010000000001000000010100000100010000010101000000000100000001010000010001000001010100000000010$   
 $000000101000001000100000101010000000001000000010100000100010000010101$
- 171)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1000000010100010001010000000001000100000,$   
 $s = 1000000010100010001010000000001000100000100000001010001000101000000000100010000010000000101000$   
 $10001010000000001000100000100000001010001000101000000000100010000010000000101000100010100000000010$   
 $001000001000000010100010001010000000001000100000100000001010001000101000000001010001000101$
- 172)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10000010101000001000100000000101000000000,$   
 $s = 10000010101000001000100000000101000000000100000101010000010001000000001010000000010000010101000$   
 $001000100000000101000000000100000101010000010001000000010100000000010000010101000001000100000001010$   
 $000000001000001010100000100010000000101000000000100000101010000010001$
- 173)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1001000100000100010010010000000001000000,$   
 $s = 1001000100000100010010010000000001000000100100010000010001001001000000000100000010010001000001$   
 $0001001001000000000100000010010001000001000100100100000000010000001001000100000100010010000000$   
 $010000001001000100000100010010010000000001000000100100010000010001001$
- 174)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10001000001000100100100000000001000000100,$   
 $s = 10001000001000100100100000000001000000100100010000010001001001000000000100000010010001000001000$   
 $100100100000000001000000100100010000010001001000000000100000010010001000001000100100100000000010$   
 $00000100100010000010001001000000000100000010010001000001000100010001000100010001001001$
- 175)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000010000000000100010010001000$   
 $10000010000001001000000000100010010001000001000000100100000000010001001000100000100000010010$   
 $0000000010001001001000100000100000010010000000001000100100010001000001$
- 176)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10001010000000010100010001000000000100000,$   
 $s = 10001010000000010100010001000000000100000100010100000001010001000100000000010000010001010000000$   
 $1010001000100000000010000010001010000000101000100010000000001000001000101000000010100010001000000$   
 $001000001000101000000010100010001000000000100000100010100000001010001$
- 177)  $n_m = 9, w = 54, L_{min} = 300, n_b = 6, n_d = 21,$   
 $b = 10100000001010001000100000000001000001000,$   
 $s = 10100000001010001000100000000001000001000101000000010100010001000000000100000100010100000001010$

00100010000000001000001000101000000010100010001000000000100000100010100000001010001000100000000010  
000010001010000000101000100010000000001000001000101000000010100010001

- 178)  $n_m = 9, w = 55, L_{min} = 301, n_b = 6, n_d = 22,$   
 $b = 1100000001010000000111000000000100000000,$   
 $s = 110000000101000000011100000000010000000011000000010100000001110000000010000000011000000010100$   
 $0000011100000000010000000011000000010100000001110000000010000000011000000010100000001110000000001$   
 $0000000011000000010100000001110000000001000000001100000001010000000111$
- 179)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 10000000011000000001010000000111000000000,$   
 $s = 10000000011000000001010000000111000000000100000000110000000101000000011100000000010000000011000$   
 $000010100000000111000000000100000000110000000101000000011100000000010000000011000000010100000001110$   
 $0000000010000000011000000010100000001110000000001000000001100000001010000000111$
- 180)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 10000000111000000001010000000011000000000,$   
 $s = 100000001110000000010100000000110000000001000000011100000001010000000011000000000100000000111000$   
 $000010100000000110000000001000000001110000000101000000001100000000010000000111000000010100000000110$   
 $00000000100000000111000000010100000000110000000001000000011100000001010000000011$
- 181)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 1000000010100000100010000010101000000000,$   
 $s = 1000000010100000100010000010101000000000100000001010000010001000001010100000000010000000101000$   
 $00100010000010101000000000100000001010000010001000001010100000000010000000101000001000100000101010$   
 $0000000010000000101000001000100000101010000000010000000101000001000100000100010000010101$
- 182)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 10001000001000000001010001000101000000000,$   
 $s = 100010000010000000010100010001010000000001000100000100000000101000100010100000000010001000001000$   
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- 183)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 10000010101000001000100000000101000000000,$   
 $s = 10000010101000001000100000000101000000000100000101010000010001000000010100000000010000010101000$   
 $001000100000000101000000000100000101010000010001000000010100000000010000010101000001000100000001010$   
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- 184)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 1000000100100010000010001001001001000000000,$   
 $s = 1000000100100010000010001001001001000000000100000010010001000001000100100100000000010000001001000$   
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 $000000001000000100100010000010001001001000000000100000010010001000001000100010001001001$
- 185)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000100100000000010001001000$   
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 $00000000100010010010001000001000000100100000000010001001000100000100000010000001001$
- 186)  $n_m = 9, w = 56, L_{min} = 310, n_b = 6, n_d = 31,$   
 $b = 100000100010100000000101000100010000000000,$   
 $s = 1000001000101000000001010001000100000000001000001000101000000010100010001000000000100001010$   
 $0000000101000100010000000001000001000101000000010100010001000000000100000100010000000101000100010$   
 $000000000100000100001010000000101000100010000000001000001000101000000010100010001$
- 187)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 100000101010101010100000000000010000000000100000001000,$   
 $s = 100000101010101010100000000000010000000000100000001000100000101010101010000000000010000000000000$   
 $001000100000010101010101000000000000100000000010000000100010000001010101010100000000000010000000000000$   
 $00001000100000010101010101000000000000100000000010000000100010000001000100000010101010101$



- 188)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10100000101010101000000000001000100000000010000000,$   
 $s = 101000001010101010000000000010001000000000100000010101010100000000001000100000000010$   
 $0000001010000010101010100000000000100010000000001000000101000001010101010000000000010001000000000$   
 $1000000010100000101010101000000000001000100000000100000010100000101010101$
- 189)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 1010001000101010100000000010000000100000000100000,$   
 $s = 101000100010101010000000001000000010000000010000010100010001010101000000000100000001000000000$   
 $100000101000100010101010000000001000000010000000010000010100010001010101000000001000000010000000$   
 $00100000101000100010101010000000001000000010000000010000010100010001010101$
- 190)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10100010001010101000000000000010100000100000000000,$   
 $s = 1010001000101010100000000000001010000010000000000010100010001010101000000000000010100000100000$   
 $00000010100010001010101000000000000010100000100000000000101000100010101010000000000000101000001000$   
 $000000001010001000101010100000000000001010000010000000000010100010001010101$
- 191)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10100010100010101000000000000100010000000100000000,$   
 $s = 10100010100010101000000000000100010000000100000000010100010100010101000000000001000100000001000$   
 $00000010100010100010101000000000000100010000000100000000101000101000101010000000000010001000000010$   
 $00000000101000101000101010000000000010001000000010000000010100010100010101$
- 192)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10100010100010101000000000000100000100010000000000,$   
 $s = 1010001010001010100000000000010000010001000000000010100010100010101000000000001000001000100000$   
 $000000101000101000101010000000000010000010001000000000010100010100010101000000000010000010001000$   
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- 193)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10101000100010101000000000000000101000100000000000,$   
 $s = 10101000100010101000000000000000101000100000000000101010001000101010000000000000101000100000$   
 $000000101010001000101010000000000000101000100000000001010100010001010100000000000001010001000$   
 $000000001010100010001010100000000000001010001000000000010101000100010101$
- 194)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10001010101000101000000000000100000000010100000000,$   
 $s = 1000101010100010100000000000010000000001010000000010001010100010100000000001000000000101000$   
 $00000010001010101000101000000000010000000001010000000010001010101000101000000000010000000001010$   
 $0000000010001010101000101000000000010000000001010000000010001010101000101$
- 195)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10101010001000101000000000000010001000000010000000,$   
 $s = 1010101000100010100000000000001000100000001000000010101010001000101000000000000010001000000010$   
 $00000010101010001000101000000000000010001000000010000000100000001010101000100010100000000000100010000000$   
 $10000000101010100010001010000000000000100010000000100000001000000010101010001000101$
- 196)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 1010101000100010100000000001000000001000000010000000,$   
 $s = 10101010001000101000000000100000001000000010000000101010100010001010000000001000000010000000010$   
 $0000001010101000100010100000000010000000100000001000000010101010001000101000000001000000010000000$   
 $100000001010101000100010100000000010000000100000001000000010101010001000101$
- 197)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10101010100000101000000000000000100010001000000000,$   
 $s = 10101010100000101000000000000000100010001000000001010101010000010100000000000000100010001000$   
 $000000101010101000001010000000000000100010001000000001010101010000010100000000000001000100010$   
 $0000000010101010100000101000000000000001000100010000000010101010100000101$
- 198)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 1010100010100010100000001010000000000000000000001000,$   
 $s = 1010100010100010100000001010000000000000000000001000101010001010000000101000000000000000000$

00100010101000101000101000000010100000000000000001000101010001010001010000000101000000000000000  
0000100010101000101000101000000010100000000000000000100010101000101000101

199)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10101010100000101000100000000000100000000010000000,$   
 $s = 10101010100000101000100000000000100000000100000001010101010000010100010000000000100000000010$   
 $00000010101010100000101000100000000001000000001000000010101010100000101000100000000001000000000$   
 $1000000010101010100000101000100000000001000000001000000010101010100000101$

200)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 1010101000100010100000100000000000010000010000000,$   
 $s = 10101010001000101000001000000000000100000100000001010101000100010100000100000000000010000010$   
 $00000010101010001000101000001000000000001000001000000010101010001000101000001000000000000100000$   
 $1000000010101010001000101000001000000000001000001000000010101010001000101$

201)  $n_m = 9, w = 57, L_{min} = 316, n_b = 5, n_d = 17,$   
 $b = 10101010100000101000000000100000100000000010000000,$   
 $s = 1010101010000010100000000010000010000000001000000010101010100000101000000000100000100000000010$   
 $0000001010101010000010100000000010000010000000001000000010101010100000101000000001000001000000000$   
 $10000000101010101000001010000000001000001000000001000000010101010100000101$

202)  $n_m = 9, w = 58, L_{min} = 320, n_b = 5, n_d = 21,$   
 $b = 1000100000101010101010100000000000100000000010000000,$   
 $s = 100010000010101010101010000000000010000000001000000010001000001010101010100000000000100000000010$   
 $0000001000100000101010101010000000000100000000010000000100010000010101010101000000000001000000000$   
 $100000001000100000101010101010000000000100000000010000000100010000010101010101$

203)  $n_m = 9, w = 58, L_{min} = 320, n_b = 5, n_d = 21,$   
 $b = 100010101000101000101000000010100000000000000000000,$   
 $s = 10001010100010100010100000001010000000000000000000010001010100010100010100000001010000000000000$   
 $00000010001010100010100010100000001010000000000000000010001010100010100010100000001010000000000$   
 $00000000100010101000101000101000000010100000000000000000100010101000101000101$

204)  $n_m = 9, w = 58, L_{min} = 320, n_b = 5, n_d = 21,$   
 $b = 10101010100000101000100000000000100000000010000000,$   
 $s = 101010101000001010001000000000001000000000100000001010101010000010100010000000000100000000010$   
 $0000001010101010000010100010000000001000000001000000010101010100000101000100000000001000000000$   
 $1000000010101010100000101000100000000010000000010000000101010101000001010001$

205)  $n_m = 9, w = 59, L_{min} = 322, n_b = 7, n_d = 3,$   
 $b = 1110000000001000000001100000001010000000,$   
 $s = 111000000000100000000110000000101000000011100000000100000000110000000101000000011100000000010$   
 $0000000110000000010100000001110000000010000000011000000010100000001110000000010000000011000000010$   
 $100000001110000000001000000001100000001010000000111000000001000000001100000001010000000111$

206)  $n_m = 9, w = 59, L_{min} = 322, n_b = 7, n_d = 3,$   
 $b = 1110000000101000000001100000000010000000,$   
 $s = 111000000010100000000110000000001000000011100000001010000000011000000001000000011100000001010$   
 $0000000110000000001000000001110000000101000000001100000000100000001110000000101000000001100000000$   
 $10000000111000000010100000000110000000010000000111000000010100000000110000000010000000111$

207)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1000000011100000000010000000011000000010,$   
 $s = 100000001110000000001000000001100000001010000000111000000001000000001100000001010000000111000$   
 $000000100000000110000000101000000011100000000100000000110000000101000000011100000000100000000110$   
 $000000101000000011100000000100000000110000000101000000011100000000100000000110000000101000000011$   
1

208)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 100000001110000000101000000001100000000,$   
 $s = 10000000111000000010100000000110000000010000000111000000010100000000110000000010000000111000$   
 $000010100000000110000000010000000111000000010100000000110000000010000000111000000010100000000110$   
 $000000001000000011100000001010000000011000000001000000011100000001010000000010000000011000000011$   
1

- 209)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1110000000101000000001100000000010000000,$   
 $s = 111000000010100000000110000000001000000011100000001010000000011000000001000000011100000001010$   
 $0000000110000000001000000011100000001010000000011000000001000000011100000001010000000011000000000$   
 $100000001110000000101000000001100000000100000001110000000101000000001100000000100000001110000000$   
 $1$
- 210)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1000001010100000000010000000101000001000,$   
 $s = 1000001010100000000010000000101000001000100000101010000000001000000010100000100010000010101000$   
 $0000001000000010100000100010000010101000000000100000010100000100010000010101000000000100000001010$   
 $0000100010000010101000000000100000010100000100010000010101000000000100000010001000001010$   
 $1$
- 211)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 10100010001010000000001000100000100000000,$   
 $s = 1010001000101000000000100010000010000000101000100010100000000010001000001000000010100010001010$   
 $00000000100010000010000000101000100010100000000010001000001000000010100010001010000000001000100000$   
 $10000000101000100010100000000010001000001000000010100010001010000000001000100000100000001010001000$   
 $1$
- 212)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 10001000101000000000010001000001000000010,$   
 $s = 10001000101000000000010001000001000000010100010001010000000001000100000100000001010001000101000$   
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 $000000101000100010100000000010001000001000000010100010001010000000001000100000101000100010$   
 $1$
- 213)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1000001010100000100010000000101000000000,$   
 $s = 1000001010100000100010000000101000000000100000101010000010001000000010100000000010000010101000$   
 $00100010000000101000000000100000101010000010001000000010100000000010000010101000001000100000001010$   
 $00000000100000101010000010001000000010100000000010000010101000001000100000001010000000001000001010$   
 $1$
- 214)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1010100000100010000000101000000000100000,$   
 $s = 1010100000100010000000101000000000100000101010000010001000000010100000000010000010101000001000$   
 $10000000101000000000100000101010000010001000000010100000000010000010101000001000100000001010000000$   
 $00100000101010000010001000000010100000000010000010101000001000100000001010000000001000001010100000$   
 $1$
- 215)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 10001001001000000000010000001001000100000,$   
 $s = 10001001001000000000010000001001000100000100010010010000000001000000100100010000010001001000$   
 $000000100000010010001000000100010010010000000001000000100100010000010001001001001000$   
 $0010000010001001001000000000100000010010001000001000100100100000000010000001001001000001000100100$   
 $1$
- 216)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 10001001001000100000100000001001000000000,$   
 $s = 10001001001000100000100000001001000000000100010010010001000001000000100100000000010001001000$   
 $100000100000001001000000000100010010010001000001000000100100000000010001001001000100000010010$   
 $000000001000100100100010000010000000100100000000010001001001000100000100000000001000100100$   
 $1$
- 217)  $n_m = 9, w = 60, L_{min} = 330, n_b = 7, n_d = 11,$   
 $b = 1001001000100000100000010010000000001000,$   
 $s = 1001001000100000100000010010000000001000100100100010000010000001001000000000100010010010001000$   
 $0010000001001000000000010001001001000100000100000010010000000001000100100100010000001000000100100000$   
 $00001000100100100010000010000001001000000000100010010010001000001000000100100000000010001001001000$   
 $1$



[illegible]

- 236)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 1000000011100000001010000000011000000000,$   
 $s = 1000000011100000001010000000011000000000100000000111000000010100000000110000000010000000111000$   
 $00001010000000011000000000100000000111000000010100000000110000000010000000111000000010100000000110$   
 $0000000010000000111000000010100000000110000000010000000111000000101000000011000000001000000011$   
 $100000001010000000011$
- 237)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 1000000010100000100010000010101000000000,$   
 $s = 1000000010100000100010000010101000000000100000001010000010001000001010100000000010000000101000$   
 $0010001000001010100000000010000000101000001000100000101010000000001000000101000001000100000101010$   
 $0000000010000000101000001000100000101010000000001000000101000001000100000101010000000001000000010$   
 $100000100010000010101$
- 238)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 10001000001000000001010001000101000000000,$   
 $s = 100010000010000000010100010001010000000001000100000100000000101000100010100000000010001000001000$   
 $000010100010001010000000001000100000100000000101000100010100000000010001000001000000010100010001010$   
 $0000000010001000001000000001010001000101000000000100010000010000000010100010001010000000001000100000$   
 $100000001010001000101$
- 239)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 10000010101000001000100000000101000000000,$   
 $s = 10000010101000001000100000000101000000000100000101010000010001000000010100000000010000010101000$   
 $0010001000000001010000000001000001010100000100010000000010100000000010000010101000001000100000001010$   
 $00000000100000101010000010001000000010100000000010000010101000001000100000001010000000001000001010$   
 $1000001000100000000101$
- 240)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 1000000100100010000010001001001001000000000,$   
 $s = 1000000100100010000010001001001001000000000100000010010001000001000100100100000000010000001001000$   
 $10000010001001001000000000100000010010001000001000100100100000000010000001001000100000100010010010$   
 $00000000100000010010001000001000100100100000000010000001001000100000100010010010000000001000000100$   
 $100010000010001001001$
- 241)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 10001001001000100000100000010010000000001000100100100010000010000001001000000000100010010001000$   
 $10000010000001001000000000100010010001000001000000100100000000010001001000100000100000010010$   
 $00000000100010010010001000001000000100100000000010001001000100000100000010010000000001000100100$   
 $100010000010000001001$
- 242)  $n_m = 9, w = 64, L_{min} = 350, n_b = 7, n_d = 31,$   
 $b = 100000100010100000000101000100010000000000,$   
 $s = 1000001000101000000001010001000100000000001000001000101000000001010001000100000000010000010001010$   
 $0000000101000100010000000001000001000101000000001010001000100000000010000010001010000000101000100010$   
 $00000000010000010001010000000010100010001000000000100000100010100000000101000100010000000001000001000$   
 $1010000000010100010001$
- 243)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 10101010101000000000000100000000010000000010000000,$   
 $s = 101010101010000000000001000000000100000001000100000101010101010000000000010000000001000000001000$   
 $1000001010101010100000000001000000000100000001000100000101010101010000000000010000000001000000010$   
 $001000000101010101010000000000010000000001000000010001000001010101010100000000000100000000010000000$   
 $10001000000101010101$
- 244)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 1010101010000000000001000000000100000000100010000010,$   
 $s = 1010101010000000000001000000000100000001000100000101010101000000000001000000000100000000100010$   
 $0000101010101010000000000010000000001000000010001000001010101010000000000010000000001000000001000$   
 $1000001010101010100000000001000000000100000001000100000101010101010000000000010000000001000000010$   
 $00100000010101010101$

- 245)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 101010101000000000001000100000000010000000010100000,$   
 $s = 1010101010000000000010001000000000100000001010000010101010100000000000100010000000001000000010$   
 $1000001010101010100000000000100010000000001000000010100000101010101000000000001000100000000010000000$   
 $101000001010101010100000000000100010000000001000000010100000101010101000000000010001000000000100000$   
 $0010100000101010101$
- 246)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 10101010100000101000000000000000100010001000000000,$   
 $s = 1010101010000010100000000000000010001000100000000010101010100000101000000000000000100010001000$   
 $00000010101010100000101000000000000000100010001000000000101010101000001010000000000000001000100010$   
 $000000001010101010000010100000000000000100010001000000000101010101000001010000000000000010001000$   
 $1000000000101010101$
- 247)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 101010101000001010001000000000000100000000010000000,$   
 $s = 10101010100000101000100000000000010000000001000000010101010100000101000100000000000100000000010$   
 $0000001010101010000010100010000000000010000000001000000010101010100000101000100000000001000000000$   
 $100000001010101010000010100010000000000100000000010000000101010101000001010001000000000010000000$   
 $0010000000101010101$
- 248)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 10101010100000100001000000000001000000000100000001000,$   
 $s = 101010101000001000010000000000100000000010000000100010101010100000100010000000001000000000100000$   
 $001000101010101000001000010000000001000000000100000001000101010101000001000100000000010000000001000$   
 $00001000101010101000001000010000000001000000001000000010001010101010000010001000000000100000000010$   
 $0000001000101010101$
- 249)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 1010101010000000000100010000010000000000100000001000,$   
 $s = 10101010100000000001000100000100000000010000000100010101010100000000010001000001000000000100000$   
 $00100010101010100000000010001000001000000000100000001000101010101000000000100010000010000000001000$   
 $00001000101010101000000000100010000010000000001000000010001010101010000000001000100000100000000010$   
 $0000001000101010101$
- 250)  $n_m = 9, w = 65, L_{min} = 358, n_b = 6, n_d = 9,$   
 $b = 101010101000001010000000001000001000000000010000000,$   
 $s = 10101010100000101000000000100000100000000001000000010101010100000101000000000100000100000000010$   
 $00000010101010100000101000000000100000100000000010000000101010101000001010000000001000001000000000$   
 $10000000101010101000001010000000001000001000000000100000001010101010000010100000000010000010000000$   
 $0010000000101010101$
- 251)  $n_m = 9, w = 66, L_{min} = 360, n_b = 6, n_d = 11,$   
 $b = 1010101010100000000000010000000001000000001000100000,$   
 $s = 1010101010100000000000010000000001000000001000100000101010101010000000000010000000001000000001000$   
 $10000010101010101000000000001000000000100000001000100000101010101010000000000010000000001000000010$   
 $00100000101010101010000000000010000000001000000010001000001010101010100000000000100000000010000000$   
 $100010000010101010101$
- 252)  $n_m = 9, w = 67, L_{min} = 362, n_b = 8, n_d = 3,$   
 $b = 111000000000100000000011000000001010000000,$   
 $s = 1110000000001000000000110000000010100000000111000000000100000000011000000001010000000011100000000010$   
 $0000000011000000001010000000011100000000010000000001100000000101000000001110000000001000000000110000000010$   
 $100000000111000000000100000000011000000001010000000011100000000010000000001100000000101000000001110000000$   
 $001000000000110000000010100000000111$
- 253)  $n_m = 9, w = 67, L_{min} = 362, n_b = 8, n_d = 3,$   
 $b = 111000000001010000000001100000000010000000,$   
 $s = 11100000000101000000000110000000001000000000111000000001010000000011000000000100000000111000000001010$   
 $000000001100000000001000000000111000000001010000000011000000000100000000111000000001010000000011000000000$   
 $10000000011100000000101000000000110000000001000000001110000000010100000000110000000001000000001110000000$   
 $10100000000011000000000100000000111$

- [illegible]



- 263)  $n_m = 9, w = 68, L_{min} = 370, n_b = 8, n_d = 11,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000000100100000000010001001000$   
 $1000001000000100100000000010001001001000100000100000010010000000001000100100100010000010000010010$   
 $0000000010001001001000100000100000010010000000001000100100100010000010000001000100100$   
 $10001000001000000100100000000010001001001$
- 264)  $n_m = 9, w = 68, L_{min} = 370, n_b = 8, n_d = 11,$   
 $b = 1001001000100000100000010010000000001000,$   
 $s = 1001001000100000100000010010000000001000100100100010000010000001001000000000100010010010001000$   
 $0010000001001000000000100010010010001000001000000100100000000010001001001000100000100100000$   
 $00001000100100100010000010000001001000000001000100100100010000010000001001001001000$   
 $10000010000001001000000000100010010010001$
- 265)  $n_m = 9, w = 68, L_{min} = 370, n_b = 8, n_d = 11,$   
 $b = 10100010001000000000100000100010100000000,$   
 $s = 10100010001000000000100000100010100000000101000100010000000001000001000101000000010100010001000$   
 $0000001000001000101000000010100010001000000001000001000101000000001000001000100000100010$   
 $100000001010001000100000000010000010001010000000010100010001000000001000001000100001000$   
 $10000000001000001000101000000010100010001$
- 266)  $n_m = 9, w = 69, L_{min} = 372, n_b = 8, n_d = 13,$   
 $b = 101000000001110000000001000000001100000000,$   
 $s = 101000000001110000000001000000001100000000101000000011100000000100000000110000000010100000001110$   
 $000000001000000000110000000010100000001110000000001000000001100000001010000000111000000001000000001$   
 $100000001010000000111000000001000000001100000001010000000111000000001000000001010000000$   
 $1110000000001000000001100000001010000000111$
- 267)  $n_m = 9, w = 69, L_{min} = 372, n_b = 8, n_d = 13,$   
 $b = 11100000001010000000011000000000100000000,$   
 $s = 1110000000101000000001100000000010000000111000000010100000000110000000001000000011100000001010$   
 $00000001100000000010000000111000000010100000001100000000100000001110000000101000000001100000000$   
 $1000000011100000001010000000110000000010000000111000000010100000001100000000100000001110000000$   
 $101000000001100000000100000001110000000101$
- 268)  $n_m = 9, w = 69, L_{min} = 372, n_b = 8, n_d = 13,$   
 $b = 10100010001010000000001000100000100000000,$   
 $s = 1010001000101000000000100010000010000000101000100010100000000010001000001000000010100010001010$   
 $0000000010001000001000000010100010001010000000001000100000100000001010001000101000000001000100000$   
 $1000000010100010001010000000001000100000100000001010001000101000000001000100000100000001010001000$   
 $1010000000001000100000100000001010001000101$
- 269)  $n_m = 9, w = 70, L_{min} = 380, n_b = 8, n_d = 21,$   
 $b = 110000000010100000000111000000000100000000,$   
 $s = 11000000001010000000011100000000010000000011000000001010000000111000000000100000000110000000010100$   
 $00000111000000000010000000011000000010100000001110000000001000000001100000000101000000001110000000001$   
 $000000001100000000101000000011100000000010000000011000000010100000001110000000001000000001100000001$   
 $010000000111000000000100000000110000000101000000011$
- 270)  $n_m = 9, w = 70, L_{min} = 380, n_b = 8, n_d = 21,$   
 $b = 100000000101000000001110000000001000000001,$   
 $s = 1000000001010000000011100000000010000000011000000010100000001110000000001000000001100000000101000$   
 $0000111000000000100000000110000000010100000001110000000001000000001100000001010000000011100000000010$   
 $000000011000000001010000000111000000000100000000110000000101000000011100000000010000000011000000010$   
 $100000001110000000001000000001100000001010000000111$
- 271)  $n_m = 9, w = 70, L_{min} = 380, n_b = 8, n_d = 21,$   
 $b = 100000000111000000001010000000011000000000,$   
 $s = 10000000011100000000101000000001100000000010000000011100000001010000000011000000000100000000111000$   
 $000010100000000011000000000100000000111000000010100000000110000000001000000001110000000010100000000110$   
 $000000001000000001110000000101000000001100000000010000000011100000001010000000011000000001000000011$   
 $10000000010100000000110000000001000000001110000000101$



- 281)  $n_m = 9, w = 71, L_{min} = 381, n_b = 8, n_d = 22,$   
 $b = 1100000001010000000111000000000100000000,$   
 $s = 11000000010100000001110000000001000000001100000000100000000110000000010000000011000000010100$   
 $000001110000000001000000001100000001010000000111000000001000000001100000001010000000111000000001$   
 $000000001100000001010000000111000000001000000001100000001010000000111000000001000000001100000001$   
 $010000000111000000001000000001100000001010000000111$
- 282)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000000001100000001010000000111000000000,$   
 $s = 100000000110000000101000000011100000000010000000011000000010100000001110000000010000000011000$   
 $000010100000001110000000010000000011000000010100000001110000000010000000011000000010100000001110$   
 $00000000100000000110000000101000000011100000000100000001100000001010000000111000000001000000001$   
 $100000001010000000111000000001000000001100000001010000000111$
- 283)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 10000000011100000001010000000011000000000,$   
 $s = 100000000111000000010100000000110000000001000000011100000001010000000011000000000100000000111000$   
 $0000101000000001100000000010000000011100000001010000000011000000000100000000111000000010100000000110$   
 $000000001000000001110000000101000000001100000000010000000111000000010100000000110000000001000000011$   
 $10000000101000000001100000000010000000011100000001010000000011$
- 284)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 100000000101000001000100000010101000000000,$   
 $s = 1000000010100000100010000010101000000000100000001010000010001000001010100000000010000000101000$   
 $0010001000000101010000000001000000010100000100010000010101000000000100000001000100000101010$   
 $0000000010000000101000001000100000101010000000001000000101000001000100000101010000000001000000010$   
 $1000001000100000101010000000001000000010100000100010000010101$
- 285)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000100000100000001010001000101000000000,$   
 $s = 1000100000100000001010001000101000000000100010000010000000101000100010100000000010001000001000$   
 $00001010001000101000000000100010000010000000101000100010100000000010001000001000100001000$   
 $0000000010001000001000000010100010001010000000001000100000100000100010001010000000001000100000$   
 $1000000010100010001010000000001000100000100000001010001000101000000000100010000101$
- 286)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000001010100000100010000000101000000000,$   
 $s = 10000010101000001000100000001010000000001000001010100000100010000000100000000010000010101000$   
 $0010001000000010100000000010000010101000001000100000001010000000010000010101000001000100000001010$   
 $000000001000001010100000100010000000101000000000100000101010000010001000000001000001010$   
 $100000100010000000101000000001000001010100000100010000000101$
- 287)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000000100100010000010001001001000000000,$   
 $s = 1000000100100010000010001001001000000000100000010010001000001000100100100000000010000001001000$   
 $1000001000100100100000000010000001001000100000100010010010000000001000000100100010010010$   
 $000000001000000100100010000010001001001000000000100000010010010010000000001000000100$   
 $100010000010001001001000000000100000010010001000001000100010001000100010001001$
- 288)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000100100100010000010000001001000000000,$   
 $s = 1000100100100010000010000001001000000000100010010010001000001000100000000010001001001000$   
 $10000010000001001000000000100010010010001000001000000100100000000010001001001000100000010010$   
 $0000000010001001001000100000100000010010000000001000100100100010000010000001000100100$   
 $100010000010000001001000000000100010010001000010000001000100000000010001001001$
- 289)  $n_m = 9, w = 72, L_{min} = 390, n_b = 8, n_d = 31,$   
 $b = 1000001000101000000010100010001000000000,$   
 $s = 100000100010100000001010001000100000000010000010001000100000000010000010001001010$   
 $000000101000100010000000001000001000101000000010100010001000000000100000100010000100010$   
 $0000000010000010001010000000101000100010000000001000001000101000000010100010001000000001000001000$   
 $10100000001010001000100000000010000010001010000000101000100010000000010100010001$

[illegible]



[illegible]







- 33



353)  $n_m = 9$ ,  $w = 73$ ,  $L_{min} = 400$ ,  $n_b = 9$ ,  $n_d = 1$ ,  
 $b = 1000000000100000100010100000001010001000$ ,  
 $s = 10000000001000001000101000000010100010001000000000100000100010100000001000100010000000001000$   
 $0010001010000000101000100010000000010000010001010000000101000100010000000001000001000101000000010$   
 $100010001000000000100000100010100000001010001000100000000100000100010100000001010001000100000000$   
 $100000100010100000001010001000100000000100000100010100000001010001000100000000$