13.8

(a)

26\*26\*26\*26\*26 = 11881376

(b)

26\*25\*24\*23\*22 = 7893600

(c)

26\*26 = 676

(d)

26\*26\*2 = 1352

(e)

26\*26\*2 – 1 = 1351

13.44

(a)

(b)

10\*9\*8\*7 = 5040

(c)

(d)

10\*10\*10\*10 = 10000

13.50

(a)

X1,X2,X3,X4 > 0

(b)

X1,X2,X3,X4 >= 0

=286

(c)

= 455

13.51

(a)

20 bit strings =

Q(n) = # of n-bit strings not containing 00

Two cases:

1. (n-1)-bit string not containing 00
2. (n-2)-bit string not containing 00

Q(n) = Q(n-1) + Q(n-2)

Q(1) = # 1-bit strings not containing 00 = 2

Q(2) = # 2-bit strings not containing 00 = 3

Compute the sequence, Q(20) = 17711

T(n) = - 17711

13.61

Coefficients of :

Coefficients of : 0

Coefficients of :

Coefficients of :

Coefficients of :

14.5

(a)

= 286

(b)

(c)

= 92378

(d)

14.14

(a)

Case1: 6 0’s and 4 1’s

Case2: 7 0’s and 3 1’s

Case3: 8 0’s and 2 1’s

Case4: 9 0’s and 1 1’s

Case5: all zero

1

**Total = 210 + 120 + 45 + 10 + 1 = 386**

(b)

(c)

(d)

112\*2 – 2 = 222