

1=

A9B9C

$$a=10*(16^4)=655360$$

$$9=9*(16^3)=36864$$

$$b=11*(16^2)=2816$$

$$9=9*(16^1)=1296$$

$$c=12$$

sum

695196

2

$$\text{pete } 4c=64+12=76$$

$$\text{jake } =5a=80+10=90$$

$$\text{dif}=14$$

3

0110 1110 0111 0011

0000 1110 0110 1010

0111 1100 1101 1101

4

face2face15bacbae

xxxxxxxxf28a37774=1127466268F28A37774

122149215d3e

1222149215D3E5E4322

e15bacbae

f28a37774

1D3E5E4322

5=

$$1) X*Y*Z+\sim(X\rightarrow Y)+X*\sim Z \leftrightarrow \sim(\sim X*Y+\sim(X+Y)), \text{ where } X=0, Y=1, Z=0$$

$$0*1*0+\sim(0\rightarrow 1)+0*1 \leftrightarrow \sim(1*1+0)$$

$$0+\sim(0\rightarrow 1)+0 \leftrightarrow 0$$

$$0+\sim(1)+0 \leftrightarrow 0$$

$$0 \leftrightarrow 0$$

1

$$2) (\sim A \oplus B*C)*\sim(A+C) + B*C, \text{ where } A=1, B=0, C=0$$

$$(0 \oplus 0)*\sim(1+0) + 0*0$$

$$(0 \oplus 0)*0 + 0$$

$$0*0$$

0

3)  $(P*Q+P \leftrightarrow (P+1)*P) \rightarrow P*Q+\sim P*\sim Q*R+\sim(P+\sim Q+\sim R)$ , where  $P=0, Q=1, R=1$

$(0*1+0 \leftrightarrow (1)*0) \rightarrow 0*1+1*0*1+\sim(0+0+0)$

$(1 \leftrightarrow 0) \rightarrow 0*1+1*0*1+1$

$0 \rightarrow 0+0+1$

$0 \rightarrow 1$

1