Pg.79习题

# 3.

1. (25.8125)10=(11001.1101)2=(31.64)8=(19.D)16
2. (101101.011)2=(45.375)10=(55.3)8=(2D.6)16=(0100 0101.0011 0111 0101)8421
3. (0101 1001 0110.0011)8421=(596.3)10=(1001010100.0100110011001...)2=(254.4CCC...)16
4. (4E.C)16=(78.75)10=(1001110.11)2

# 9.

1. x = 0xffff8000
2. y = 0x020a
3. z = 0x0000fffa
4. c = 0x40
5. f = 0xbf8ccccd
6. d = 0x4025000000000000

# 10.

1. x = -65530
2. y = -8196
3. z = 4294967290
4. c = \*
5. a = -800
6. b = -10.25

# 15.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | y | x^y | x&y | x|y | ~x|~y | x&!y | x&&y | x||y | !x||!y | x&&~y |
| 0x5f | 0xa0 | 0xff | 0x0 | 0xff | 0xff | 0x0 | 0x1 | 0x1 | 0x0 | 0x1 |
| 0xc7 | 0xf0 | 0x37 | 0xc0 | 0xf7 | 0x3f | 0x0 | 0x1 | 0x1 | 0x0 | 0x1 |
| 0x80 | 0x7f | 0xff | 0x0 | 0xff | 0xff | 0x0 | 0x1 | 0x1 | 0x0 | 0x1 |
| 0x07 | 0x55 | 0x52 | 0x5 | 0x57 | 0xfa | 0x0 | 0x1 | 0x1 | 0x0 | 0x1 |

# 21.

M = 15;

N = 4;

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 表示 | X | x | Y | y | X+Y | x+y | OF | SF | CF | X-Y | x-y | OF | SF | CF |
| 无符号 | 0xB0 | 176 | 0x8C | 140 | 0x3C | 60 | 1 | 0 | 1 | 0x24 | 36 | 0 | 0 | 0 |
| 带符号 | 0xB0 | -80 | 0x8C | -116 | 0x3C | 60 | 1 | 0 | 1 | 0x24 | 36 | 0 | 0 | 0 |
| 无符号 | 0x7E | 126 | 0x5D | 93 | 0xDB | 219 | 1 | 1 | 0 | 0x21 | 33 | 0 | 0 | 0 |
| 带符号 | 0x7E | 126 | 0x5D | 93 | 0xDB | -37 | 1 | 1 | 0 | 0x21 | 33 | 0 | 0 | 0 |

# 29.

①无符号0xB0+0x8C=0x13C->0x3C（高位截断），最高位有进位，故CF=1. 结果最高位为0，故SF=0. OF参考带符号加法②中的解释.

0xB0-0x8C=0x24,没有借位, CF=0.结果可以用8位表示, OF=0. 结果最高位为0, SF=0.

②带符号-80+(-116)=-316, 8位无法表示故结果溢出, OF=1, 补码运算最高位有进位（同无符号加法①）故CF=1.结果最高位为0，故SF=0.

-80-(-116)=36，结果可以用8位表示故没有溢出，OF=0.没有产生借位故CF=0.结果最高位为0，故SF=0.

③无符号126+93=219,结果可以用8位表示，故没有产生进位,CF=0.结果最高位为1,故SF=1.OF参考带符号加法④中的解释.

126-93=33,结果可以用8位表示，没有发生借位故CF=0, OF=0.结果最高位为0,故SF=0.

④带符号126+93=219->-37,结果无法用8位表示，发生溢出故OF=1. 结果最高位为1,故SF=1. 最高位没有产生进位故CF=0.

126-93=33，结果可用8位表示，故没有发生溢出，OF=0.最高位没有发生借位，故CF=0.结果最高位为0故SF=0.

# 33.

|  |  |
| --- | --- |
| 1 | int div32(int x) { |
| 2 | return (x + ((x >> 31) & 0x1f)) >> 5; |
| 3 | } |

# 40.

float fpower2(int x) {

unsigned exp, frac, u;

if (x < -149) { //值太小，返回0.0

exp = 0;

frac = 0;

}

else if (x < -126) { //返回非规格化结果

exp = 0;

frac = 0x400000 >> (-x - 127);

}

else if (x < 128) {//返回规格化结果

exp = x + 127;

frac = 0;

}

else { //值太大，返回﹢∞

exp = 255;

frac = 0;

}

u = exp << 23 | frac;

return u2f(u);

}

|  |  |
| --- | --- |
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| 17 |  |
| 18 |  |
| 19 |  |
| 20 |  |
| 21 |  |
| 22 |  |