**【附录】**

**模型一程序：**

（第一原料可最多生产捆数程序）

model:

sets:

cailiao/1..8/:L,N;

cixu/1..14/;

links(cailiao,cixu):x;

endsets

data:

L=3 3.5 4 4.5 5 5.5 6 6.5;

N=43 59 39 41 27 28 34 21;

enddata

@for(cixu(j):@sum(links(i,j):x(i,j))<=20);

@for(cixu(j):@sum(links(i,j):x(i,j))>=19);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

end

（第二原料可最多生产捆数程序）

model:

sets:

cailiao/1..14/:L,N;

cixu/1..37/;

links(cailiao,cixu):x;

endsets

data:

L=7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 3.5;

N=24 24 20 25 21 23 21 18 31 23 22 59 18 25；

enddata

@for(cixu(j):@sum(links(i,j):x(i,j))<=8);

@for(cixu(j):@sum(links(i,j):x(i,j))>=7);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

End

（第三原料可最多生产捆数程序）

model:

sets:

cailiao/1..24/:L,N;

cixu/1..135/;

links(cailiao,cixu):x;

endsets

data:

L=14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5 22 22.5 23 23.5 24 24.5 25 25.5;

N=35 29 30 42 28 42 45 49 50 64 52 63 49 35 27 16 12 2 0 6 0 0 0 1;

enddata

@for(cixu(j):@sum(links(i,j):x(i,j))<=5);

@for(cixu(j):@sum(links(i,j):x(i,j))>=4);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

End

原材料三剩余根数降级为规格二使用时最多捆数的程序如下：

model:

sets:

cailiao/1..14/:L,N;

cailiao2/1..14/:z;

number/1..14/:w;

cixu/1..3/;

links(cailiao2,cixu):x;

endsets

data:

w = 24 24 6 5 0 0 0 0 0 0 0 0 0 0 ;

L=7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 13.5;

enddata

@sum(cailiao(i):N(i))=15;

@for(cailiao2(i):z1=w(1)+N(1));

@for(cailiao2(i):z2=w(2)+N(2));

@for(cailiao2(i):z3=w(3)+N(3));

@for(cailiao2(i):z4=w(4)+N(4));

@for(cailiao2(i):z5=w(5)+N(5));

@for(cailiao2(i):z6=w(6)+N(6));

@for(cailiao2(i):z7=w(7)+N(7));

@for(cailiao2(i):z8=w(8)+N(8));

@for(cailiao2(i):z9=w(9)+N(9));

@for(cailiao2(i):z10=w(10)+N(10));

@for(cailiao2(i):z11=w(11)+N(11));

@for(cailiao2(i):z12=w(12)+N(12));

@for(cailiao2(i):z13=w(13)+N(13));

@for(cailiao2(i):z14=w(14)+N(14));

@for(cixu(j):@sum(links(i,j):x(i,j))<=8);

@for(cixu(j):@sum(links(i,j):x(i,j))>=7);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao2(i):@sum(links(i,j):x(1,j))<=z1);

@for(cailiao2(i):@sum(links(i,j):x(2,j))<=z2);

@for(cailiao2(i):@sum(links(i,j):x(3,j))<=z3);

@for(cailiao2(i):@sum(links(i,j):x(4,j))<=z4);

@for(cailiao2(i):@sum(links(i,j):x(5,j))<=z5);

@for(cailiao2(i):@sum(links(i,j):x(6,j))<=z6);

@for(cailiao2(i):@sum(links(i,j):x(7,j))<=z7);

@for(cailiao2(i):@sum(links(i,j):x(8,j))<=z8);

@for(cailiao2(i):@sum(links(i,j):x(9,j))<=z9);

@for(cailiao2(i):@sum(links(i,j):x(10,j))<=z10);

@for(cailiao2(i):@sum(links(i,j):x(11,j))<=z11);

@for(cailiao2(i):@sum(links(i,j):x(12,j))<=z12);

@for(cailiao2(i):@sum(links(i,j):x(13,j))<=z13);

@for(cailiao2(i):@sum(links(i,j):x(14,j))<=z14);

@for(links:@gin(x));

End

原材料二剩余根数降级为规格一使用时最多捆数的程序如下：

model:

sets:

cailiao/1..8/:L,N;

cailiao2/1..8/:z;

number/1..8/:w;

cixu/1..3/;

links(cailiao2,cixu):x;

endsets

data:

w = 16 3 0 1 0 0 0 0 ;

L=3 3.5 4 4.5 5 5.5 6 6.5;

enddata

@sum(cailiao(i):N(i))=50;

@for(cailiao2(i):z1=w(1)+N(1));

@for(cailiao2(i):z2=w(2)+N(2));

@for(cailiao2(i):z3=w(3)+N(3));

@for(cailiao2(i):z4=w(4)+N(4));

@for(cailiao2(i):z5=w(5)+N(5));

@for(cailiao2(i):z6=w(6)+N(6));

@for(cailiao2(i):z7=w(7)+N(7));

@for(cailiao2(i):z8=w(8)+N(8));

@for(cixu(j):@sum(links(i,j):x(i,j))<=20);

@for(cixu(j):@sum(links(i,j):x(i,j))>=19);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao2(i):@sum(links(i,j):x(1,j))<=z1);

@for(cailiao2(i):@sum(links(i,j):x(2,j))<=z2);

@for(cailiao2(i):@sum(links(i,j):x(3,j))<=z3);

@for(cailiao2(i):@sum(links(i,j):x(4,j))<=z4);

@for(cailiao2(i):@sum(links(i,j):x(5,j))<=z5);

@for(cailiao2(i):@sum(links(i,j):x(6,j))<=z6);

@for(cailiao2(i):@sum(links(i,j):x(7,j))<=z7);

@for(cailiao2(i):@sum(links(i,j):x(8,j))<=z8);

@for(links:@gin(x));

end

模型二程序：

model:

sets:

cailiao/1..8/:L,N;

cixu/1..14/;

links(cailiao,cixu):x;

endsets

data:

L=3 3.5 4 4.5 5 5.5 6 6.5;

N=43 59 39 41 27 28 34 21;

enddata

max=@sum(links(i,j)|i#le#2:N(i)-@sum(links(i,j):x(i,j)));

@for(cixu(j):@sum(links(i,j):x(i,j))<=20);

@for(cixu(j):@sum(links(i,j):x(i,j))>=19);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

end

model:

sets:

cailiao/1..14/:L,N;

cixu/1..37/;

links(cailiao,cixu):x;

endsets

data:

L=7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 13.5;

N=24 24 20 25 21 23 21 18 31 23 22 59 18 25;

enddata

max=@sum(links(i,j)|i#le#4:N(i)-@sum(links(i,j):x(i,j)));

@for(cixu(j):@sum(links(i,j):x(i,j))<=8);

@for(cixu(j):@sum(links(i,j):x(i,j))>=7);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

end

model:

sets:

cailiao/1..24/:L,N;

cixu/1..135/;

links(cailiao,cixu):x;

endsets

data:

L=14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5 22 22.5 23 23.5 24 24.5 25 25.5;

N=35 29 30 42 28 42 45 49 50 64 52 63 49 35 27 16 12 2 0 6 0 0 0 1;

enddata

min=@sum(links(i,j)|i#le#3:x(i,j));

@for(cixu(j):@sum(links(i,j):x(i,j))<=5);

@for(cixu(j):@sum(links(i,j):x(i,j))>=4);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao(i):@sum(cixu(j):x(i,j))<=N(i));

@for(links:@gin(x));

End

原材料三剩余根数降级为规格二使用时最多捆数的程序如下：

model:

sets:

cailiao/1..14/:L,N;

cailiao2/1..14/:z;

number/1..14/:w;

cixu/1..4/;

links(cailiao2,cixu):x;

endsets

data:

w = 24 23 11 1 2 0 0 0 0 1 0 5 0 1 ;

L=7 7.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 13.5;

enddata

max=@sum(links(i,j)|i#le#4:N(i)-@sum(links(i,j):x(i,j)));

@sum(cailiao(i):N(i))=15;

@for(cailiao2(i):z1=w(1)+N(1));

@for(cailiao2(i):z2=w(2)+N(2));

@for(cailiao2(i):z3=w(3)+N(3));

@for(cailiao2(i):z4=w(4)+N(4));

@for(cailiao2(i):z5=w(5)+N(5));

@for(cailiao2(i):z6=w(6)+N(6));

@for(cailiao2(i):z7=w(7)+N(7));

@for(cailiao2(i):z8=w(8)+N(8));

@for(cailiao2(i):z9=w(9)+N(9));

@for(cailiao2(i):z10=w(10)+N(10));

@for(cailiao2(i):z11=w(11)+N(11));

@for(cailiao2(i):z12=w(12)+N(12));

@for(cailiao2(i):z13=w(13)+N(13));

@for(cailiao2(i):z14=w(14)+N(14));

@for(cixu(j):@sum(links(i,j):x(i,j))<=8);

@for(cixu(j):@sum(links(i,j):x(i,j))>=7);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao2(i):@sum(links(i,j):x(1,j))<=z1);

@for(cailiao2(i):@sum(links(i,j):x(2,j))<=z2);

@for(cailiao2(i):@sum(links(i,j):x(3,j))<=z3);

@for(cailiao2(i):@sum(links(i,j):x(4,j))<=z4);

@for(cailiao2(i):@sum(links(i,j):x(5,j))<=z5);

@for(cailiao2(i):@sum(links(i,j):x(6,j))<=z6);

@for(cailiao2(i):@sum(links(i,j):x(7,j))<=z7);

@for(cailiao2(i):@sum(links(i,j):x(8,j))<=z8);

@for(cailiao2(i):@sum(links(i,j):x(9,j))<=z9);

@for(cailiao2(i):@sum(links(i,j):x(10,j))<=z10);

@for(cailiao2(i):@sum(links(i,j):x(11,j))<=z11);

@for(cailiao2(i):@sum(links(i,j):x(12,j))<=z12);

@for(cailiao2(i):@sum(links(i,j):x(13,j))<=z13);

@for(cailiao2(i):@sum(links(i,j):x(14,j))<=z14);

@for(links:@gin(x));

end

原材料二剩余根数降级为规格一使用时最多捆数的程序如下：

model:

sets:

cailiao/1..8/:L,N;

cailiao2/1.. 8/:z;

number/1..8/:w;

cixu/1..3/;

links(cailiao2,cixu):x;

endsets

data:

w = 22 0 0 0 0 1 0 0 ;

L=3 3.5 4 4.5 5 5.5 6 6.5;

enddata

max=@sum(links(i,j)|i#le#4:N(i)-@sum(links(i,j):x(i,j)));

@sum(cailiao(i):N(i))=51;

@for(cailiao2(i):z1=w(1)+N(1));

@for(cailiao2(i):z2=w(2)+N(2));

@for(cailiao2(i):z3=w(3)+N(3));

@for(cailiao2(i):z4=w(4)+N(4));

@for(cailiao2(i):z5=w(5)+N(5));

@for(cailiao2(i):z6=w(6)+N(6));

@for(cailiao2(i):z7=w(7)+N(7));

@for(cailiao2(i):z8=w(8)+N(8));

@for(cixu(j):@sum(links(i,j):x(i,j))<=20);

@for(cixu(j):@sum(links(i,j):x(i,j))>=19);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))<=89.5);

@for(cixu(j):@sum(links(i,j):x(i,j)\*L(i))>=88.5);

@for(cailiao2(i):@sum(links(i,j):x(1,j))<=z1);

@for(cailiao2(i):@sum(links(i,j):x(2,j))<=z2);

@for(cailiao2(i):@sum(links(i,j):x(3,j))<=z3);

@for(cailiao2(i):@sum(links(i,j):x(4,j))<=z4);

@for(cailiao2(i):@sum(links(i,j):x(5,j))<=z5);

@for(cailiao2(i):@sum(links(i,j):x(6,j))<=z6);

@for(cailiao2(i):@sum(links(i,j):x(7,j))<=z7);

@for(cailiao2(i):@sum(links(i,j):x(8,j))<=z8);

@for(links:@gin(x));

end

工人生产时“抓药”最优方案：表一至表五。

表一：

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 编号    根数捆数 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 每捆根数 |
| 3-3.4 | 3.5-3.9 | 4-4.4 | 4.5-4.9 | 5-5.4 | 5.5-5.9 | 6-6.4 | 6.5-6.9 |
| 1 | 1 | 10 | 0 | 0 | 0 | 8 | 0 | 1 | 20 |
| 2 | 2 | 3 | 3 | 5 | 1 | 0 | 0 | 5 | 19 |
| 3 | 0 | 0 | 16 | 0 | 1 | 0 | 0 | 3 | 19 |
| 4 | 1 | 2 | 8 | 0 | 3 | 0 | 2 | 3 | 19 |
| 5 | 1 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 19 |
| 6 | 0 | 9 | 0 | 1 | 0 | 5 | 2 | 2 | 19 |
| 7 | 1 | 0 | 7 | 7 | 0 | 0 | 0 | 4 | 19 |
| 8 | 7 | 0 | 2 | 0 | 0 | 0 | 10 | 0 | 19 |
| 9 | 0 | 4 | 0 | 1 | 14 | 0 | 0 | 0 | 19 |
| 10 | 1 | 6 | 2 | 0 | 8 | 3 | 0 | 0 | 20 |
| 11 | 0 | 6 | 1 | 10 | 0 | 0 | 2 | 1 | 20 |
| 12 | 1 | 9 | 0 | 0 | 0 | 0 | 9 | 0 | 19 |
| 13 | 0 | 1 | 0 | 16 | 0 | 0 | 0 | 2 | 19 |
| 14 | 6 | 0 | 0 | 1 | 0 | 12 | 0 | 0 | 19 |
| 剩余根数 | 22 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |  |

表二：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 编号  捆数 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 每捆根数 |
| 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 8 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 1 | 0 | 8 |
| 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 3 | 0 | 0 | 8 |
| 4 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 8 |
| 5 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 1 | 3 | 0 | 0 | 8 |
| 6 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 8 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 1 | 0 | 0 | 1 | 0 | 8 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 8 |
| 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 8 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 8 |
| 11 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 8 |
| 12 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 7 |
| 13 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 1 | 8 |
| 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 0 | 1 | 0 | 8 |
| 15 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 8 |
| 16 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 8 |
| 17 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 8 |
| 18 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0 | 8 |
| 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 0 | 0 | 0 | 0 | 8 |
| 20 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 8 |
| 21 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 8 |
| 22 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 8 |
| 23 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 8 |
| 24 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 8 |
| 25 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 8 |
| 26 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 8 |
| 27 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 8 |
| 28 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 8 |
| 29 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 7 |
| 30 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 8 |
| 31 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 8 |
| 32 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 0 | 2 | 0 | 0 | 7 |
| 33 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 8 |
| 34 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 8 |
| 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | 7 |
| 36 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 8 |
| 37 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 7 |
| 剩余根数 | 24 | 23 | 11 | 1 | 2 |  |  |  |  | 1 |  | 5 |  | 1 |  |

表三：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 0 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 每捆 |
| 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 5 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 6 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 8 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 9 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 10 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 12 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 14 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 17 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 18 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 19 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 20 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 21 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 22 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 23 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 24 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 26 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 27 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 28 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 29 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 |
| 31 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 32 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 33 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 34 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 35 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 36 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 37 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 40 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 41 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 42 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 43 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 44 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 45 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 46 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 47 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 48 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 49 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 50 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 51 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 52 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 53 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 54 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 55 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 56 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 57 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 58 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 59 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 61 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 63 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 64 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 65 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 66 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 67 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 68 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 70 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 71 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 72 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 73 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 74 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 75 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 76 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 77 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 78 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 80 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 81 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 82 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 83 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 84 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 85 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 86 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 87 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 88 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 89 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 91 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 92 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 93 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 94 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 95 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 96 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 97 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 98 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 99 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 100 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 101 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 102 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 103 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 104 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 105 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 106 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 107 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 108 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 109 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 110 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 111 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 112 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 113 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 114 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 115 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 116 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 117 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 118 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 119 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 120 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 121 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 122 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 123 | 0 | 0 | 3 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 124 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 125 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 126 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 127 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 128 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 129 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 131 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 132 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 133 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 134 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 135 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 剩余 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 2 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

表四：原材料三剩余根数降级为规格二使用时最多捆数方案：

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 编号  次数 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 根数 |
| 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 8 |
| 2 | 2 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 |
| 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 8 |
| 4 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 8 |

表五：原材料二剩余根数降级为规格一使用时最多捆数方案：

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 编号  次数 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 根数 |
| 1 | 1 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 20 |
| 2 | 1 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 20 |
| 3 | 5 | 0 | 0 | 11 | 0 | 1 | 0 | 3 | 20 |
|  |  |  |  |  |  |  |  |  |  |