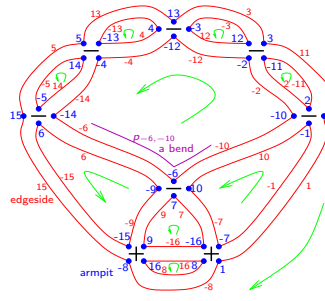


```

XingsByArmpits =
List@@PD[K] /.
x : X[i_, j_, k_, l_] =>
If[PositiveQ[x], X_[-i, j, k, -l],
X_[-j, k, l, -i]]
{X_[-1, 11, 2, -10], X_[-11, 3, 12, -2],
X_[-3, 13, 4, -12], X_[-13, 5, 14, -4],
X_[-5, 15, 6, -14], X_[-8, 16, 9, -15],
X_[-16, 8, 1, -7], X_[-9, 7, 10, -6]}

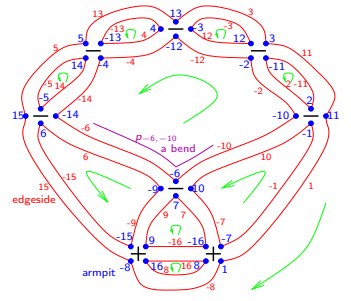
```



```

bends = Times @@ XingsByArmpits /.
_ [X] [a_, b_, c_, d_] =>
pa,-a pb,-a pc,-a pd,-c
p-16,7 p-15,-9 p-14,-6 p-13,4 p-12,-4 p-11,2
p-10,-2 p-9,6 p-8,15 p-7,-1 p-6,-10 p-5,14
p-4,-14 p-3,12 p-2,-12 p-1,10 p1,-8 p2,-11
p3,11 p4,-13 p5,13 p6,-15 p7,9 p8,16 p9,-16
p10,-7 p11,1 p12,-3 p13,3 p14,-5 p15,5 p16,8
faces = bends /. px_,y_,z_ => px,y,z
p-13,4,-13 p-11,2,-11 p-5,14,-5 p-3,12,-3
p8,16,8 p6,-15,-9,6 p9,-16,7,9 p10,-7,-1,10
p-10,-2,-12,-4,-14,-6,-10 p1,-8,15,5,13,3,11,1

```



```

A = Table[0, Length@faces, Length@faces];
A // MatrixForm

```

```

{0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0}

```

```

Do[is = Position[faces, #][[1, 1]] & /@ List@@x;
A[[is, is]] += If[Head[x] === X_,

$$\begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix} \Rightarrow \begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix}],
{x, XingsByArmpits}];$$

```

```

x = XingsByArmpits[[1]]
X_[-1, 11, 2, -10]

```

```

faces
p-13,4,-13 p-11,2,-11 p-5,14,-5 p-3,12,-3 p8,16,8 p6,-15,-9,6
p9,-16,7,9 p10,-7,-1,10 p-10,-2,-12,-4,-14,-6,-10 p1,-8,15,5,13,3,11,1
is = Position[faces, #][[1, 1]] & /@ List@@x
{8, 10, 2, 9}

```

```

A[[is, is]] += If[Head[x] === X_,

$$\begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix} \Rightarrow \begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix}],
A // MatrixForm$$

```

Recall, $is = \{8, 10, 2, 9\}$

```

{0 0 0 0 0 0 0 0 0 0
0 -v 0 0 0 0 0 -1 -u -u
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 0 0 0 0 0 0 0 0 0
0 -1 0 0 0 0 0 -v -u -u
0 -u 0 0 0 0 0 -u -1 -1
0 -u 0 0 0 0 0 -u -1 -1}

```

```

Do[is = Position[faces, #][[1, 1]] & /@ List@@x;
A[[is, is]] += If[Head[x] === X_,

$$\begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix} \Rightarrow \begin{pmatrix} v & u & 1 & u \\ u & 1 & u & 1 \\ 1 & u & v & u \\ u & 1 & u & 1 \end{pmatrix}],
{x, Rest@XingsByArmpits}];$$

```

```

A // MatrixForm

$$\begin{pmatrix} -2v & 0 & -1 & -1 & 0 & 0 & 0 & 0 & -2u & -2u \\ 0 & -2v & 0 & -1 & 0 & 0 & 0 & -1 & -2u & -2u \\ -1 & 0 & -2v & 0 & 0 & -1 & 0 & 0 & -2u & -2u \\ -1 & -1 & 0 & -2v & 0 & 0 & 0 & 0 & -2u & -2u \\ 0 & 0 & 0 & 0 & 2 & 1 & 2u & 1 & 0 & 2u \\ 0 & 0 & -1 & 0 & 1 & 1-2v & 0 & -1 & -2u & 0 \\ 0 & 0 & 0 & 0 & 2u & 0 & -1+2v & 0 & -1 & 2 \\ 0 & -1 & 0 & 0 & 1 & -1 & 0 & 1-2v & -2u & 0 \\ -2u & -2u & -2u & -2u & 0 & -2u & -1 & -2u & -6 & -5 \\ -2u & -2u & -2u & -2u & 2u & 0 & 2 & 0 & -5 & -5+2v \end{pmatrix}$$

```