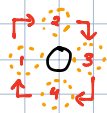


Détection de contour



```
def sides(x, y):
    for i, j in [(x-1, y),
                 (x, y+1),
                 (x+1, y),
                 (x, y-1)]:
        if (i, j) in pieces:
            yield (i, j)
```



```
def group(x, y):
    res = set([(x, y)])
    for i, j in sides(x, y):
        if color(x, y) == color(i, j):
            res.add((i, j))
            res.join(group(i, j))
    return res
```

```
def free(x, y):
    degrees = 0, counted = set()
    for i, j in group(x, y):
        if (m, n) in [(0, 0), (0, 10), (10, 0), (10, 10)]:
            degrees += 2
        elif 0 in (m, n) or 10 in (m, n):
            degrees += 1
        for m, n in sides(i, j):
            if (m, n) not in counted & (m, n) not in played:
                degrees += 1, counted.add((m, n))
    return degrees
```