

### Algorithm 1: Count Fixed Polyominoes

CountFixedPolyominoes( $G, \text{untried}, n, p$ )  $\rightarrow r$

**Input:**  $G = (V, E)$ , a graph  
 $\text{untried}$ , a set of nodes  
 $n$ , the size of polyominoes  
 $p$ , the current polyomino

**Output:**  $r$ , the number of polyominoes of size  $n$

```
1   $r \leftarrow 0$ 
2  while not IsSetEmpty( $\text{untried}$ ) do
3       $u \leftarrow \text{RemoveFromSet}(\text{untried})$ 
4      AppendToList( $p, u$ )
5      if SizeList( $p$ ) =  $n$  then
6           $r \leftarrow r + 1$ ;
7      else
8           $\text{new\_neighbors} \leftarrow \text{CreateSet}()$ 
9          foreach  $v$  in AdjacencyList( $G, u$ ) do
10             if  $v \notin \text{untried}$  and  $v \notin p$  and  $v \notin \text{Neighbors}(p \setminus u)$  then
11                 AddToSet( $\text{new\_neighbors}, v$ )
12              $\text{new\_untried} \leftarrow \text{untried} + \text{new\_neighbors}$ 
13              $r \leftarrow r + \text{CountFixedPolyominoes}(G, \text{new\_untried}, n, p)$ 
14         RemoveFromList( $p, u$ )
15  return  $r$ 
```