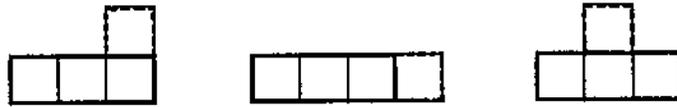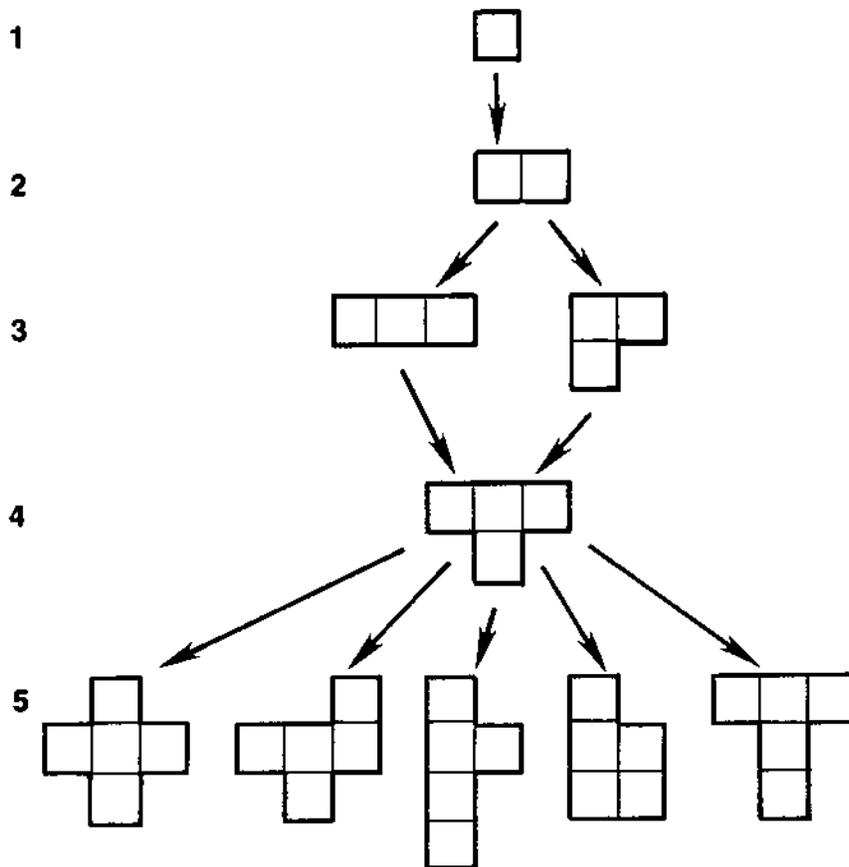# FAMILY TREES

A polyomino is a child of another polyomino if it can be made from the original poly-omino by the addition of a single square. For example, the l, i, and t tetrominoes are children of the straight triomino. The square and n tetrominoes are not.

Here is a family tree for the t tetromino. It shows all its ancestors back to the monomino and all of its pentomino children.
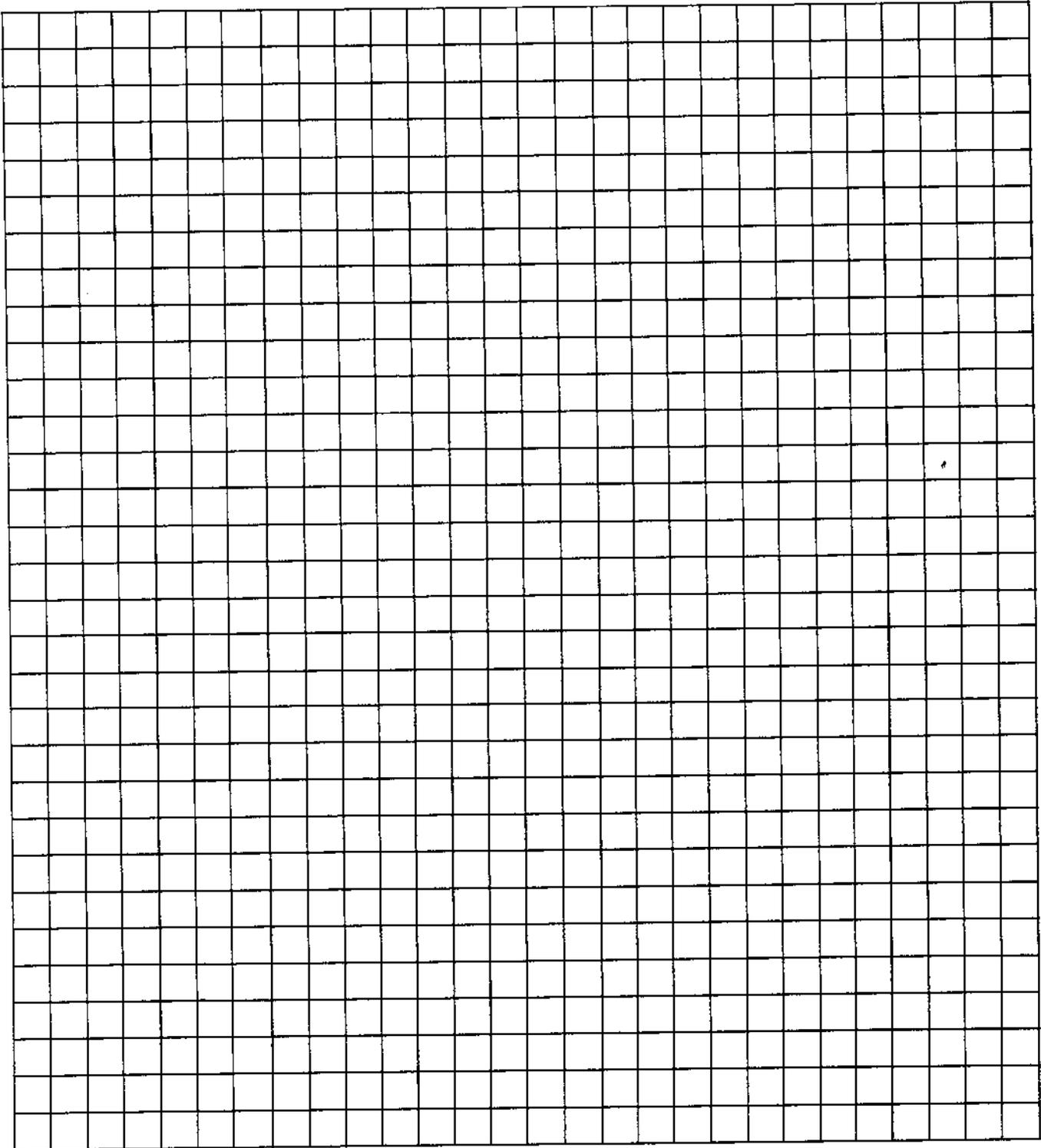
Generation:

1

2

3

4

5

Make a complete family tree for the l tetromino. Use grid paper for your drawings.

Tetromino Trees

Make complete family trees for the square, i, and n tetrominoes.

Pentomino Family Relationships

Fill in the blanks on this page.

1. Which pentomino has the most (tetromino) parents? ★ _____

Two polyominoes "of the same generation" are called siblings (brothers and sisters), if they have a parent in common. For example, the F and the P pentominoes are siblings. Both are children of the t tetromino.

2. List all the siblings of the l pentomino. ★ _____

3. List all the siblings of the W pentomino. _____

Polyominoes of the same generation are cousins if they are *not* siblings. For example, the square and the straight tetromino are cousins. They do not have a parent in common.

4. List all the cousins of the Y pentomino. _____

5. Find two "second cousin" pentominoes. These are pentominoes that have no tetromino or triomino ancestors in common. _____

Two extra-challenging problems:

6. Which pentomino has the most (hexomino) children? _____

7. Which pentomino has the fewest (hexomino) children? _____