# Logic puzzle: FAMILY TIES

Every person in Generation (Gen.) I is the grandparent of every person in Generation III. However, these grandchildren are not siblings, which means that they do not have a parent in common. Every person has at most two children. **Can you uncover their family relations?**

This is a purely logical problem, meaning that you only need logical reasoning to find out the answer. The only extra rules that you need are the following:

- Every person in (II) has at least one parent in (I).
- Every person in (III) has at least one parent in (II).
- No person in (III) has a parent in (I).
- Siblings cannot have a child together.
- Persons in each generation: two in I, three in II, and two in III.

Instructions: Draw lines between the generations to indicate who is a parent of whom. Then use the lines next to the persons to indicate which eye and hair color they have (options below).

green   blue   brown

blonde   brown   black
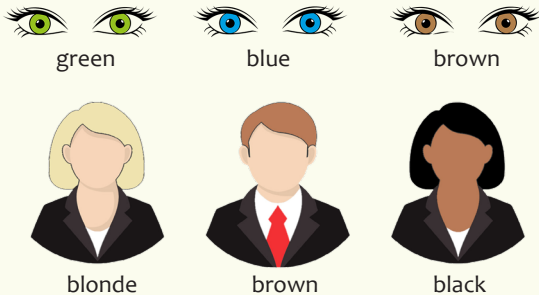
This puzzle has been created by Anouk Michelle Oudshoorn, doctoral student at the Institute of Logic and Computation at TU Wien.

Gen. I

Gen. II

Gen. III
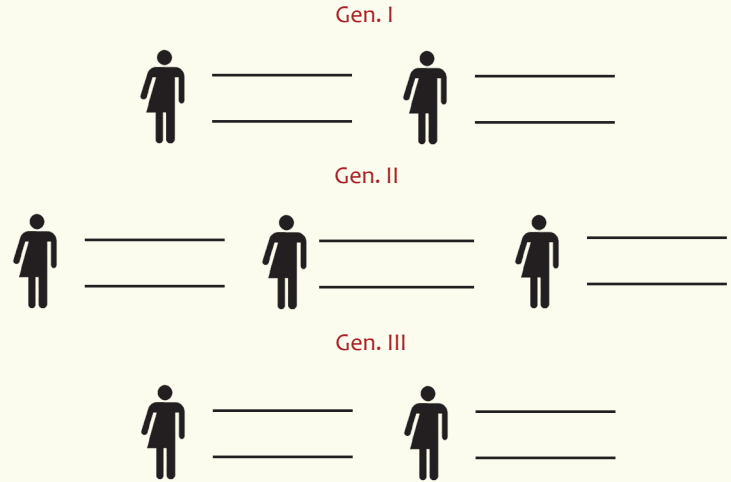
Instructions to determine hair and eye color:

- Every person in (I) or (II) with brown hair has exactly one child with brown hair.
- There is an odd amount of people with blonde hair.
- If someone has green eyes, the parents have green eyes as well. Also, there is at least one person with brown hair and green eyes.
- There is a person with both parents present in the figure who has blue eyes. The two parents differ in eye color. This person is the only one with blue eyes and does not have blonde hair.
- There is no one in (III) who has the same eye color as one of their parents and one of their grandparents.
- If someone has black hair, the siblings have black hair as well.
- At least two persons have the same eye color and black hair.
- There are exactly six combinations of hair and eye color appearing.

How many persons have brown hair and brown eyes?
The first three correct answers will be rewarded with a prize at the VCLA stand!