



## 8 Gingerbread

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Project: MATH+ School Activities

### Challenge

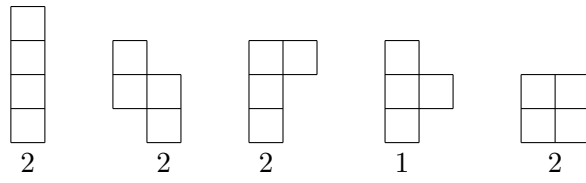
Luca, the cheekiest child at the North Pole, has broken two walls of a gingerbread house into pieces. Originally, each wall was made of  $6 \times 6$  square-shaped gingerbread tiles. Santa is not pleased about this at all and says: “Luca, if you don’t fix the walls, you won’t get a present on Christmas Eve.”

But Luca has already mixed the pieces of the house with other gingerbread. Now, the child does not know exactly which pieces are needed to repair the two walls.

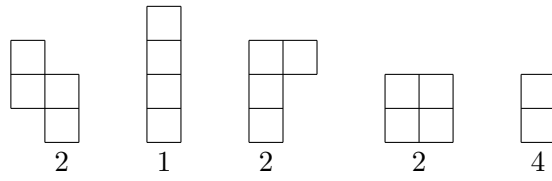
A wall can only be built out of one set (see below). The pieces may be rotated and/or mirrored. However, you are of course not allowed to cut them into smaller pieces. In each of the given sets, the number under each piece indicates how many copies of that piece are contained in the set.

Find out which two sets are needed to repair the gingerbread house.

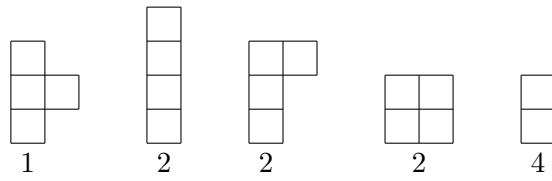
Set 1:



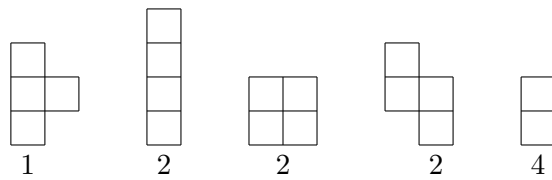
Set 2:



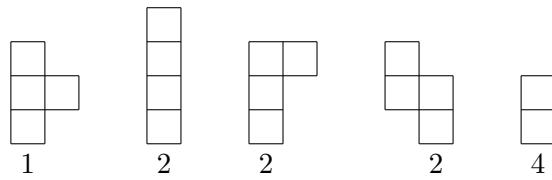
Set 3:



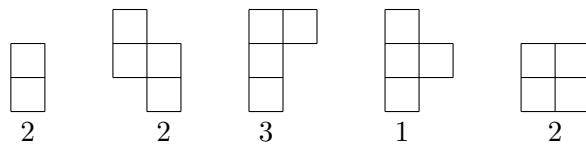
Set 4:



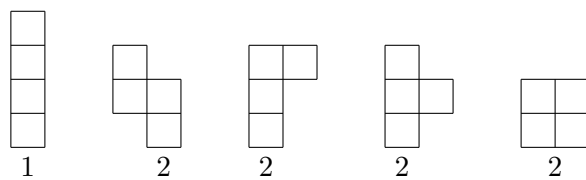
Set 5:



Set 6:



Set 7:





Artwork: Friederike Hofmann

**Possible answers:**

1. Set 1 and 2.
2. Set 1 and 4.
3. Set 1 and 6.
4. Set 2 and 3.
5. Set 2 and 5.
6. Set 2 and 7.
7. Set 3 and 4.
8. Set 3 and 6.
9. Set 4 and 5.
10. Set 4 and 7.