The ⊗ 11 Unique unfoldings of the cube

Imagined during a sleepless night, these shapes are the 11 unique ways a cube can be unfolded. I was convinced, lying in bed that there were 13 of them but 5a and 5b turn out to be variations of 3 and 5 respectively. I was alerted to this by a web page where a few 10th graders wrote that there were only 11 combinations.

When you start to look in to unfolding you immediately see that it's a whole mathematical discipline and that it relates to things like protein folding etc. But after realizing once again that there's nothing new under the sun and that I know nothing, I can still say that it was a remarkable imagination exercise. I invite you to imagine how the shapes below can each fold into a cube.

More about unfolding: http://www.ics.uci.edu/~eppstein/junkyard/unfold.html

1

2 3 4 5

6 7 8 9 10 11
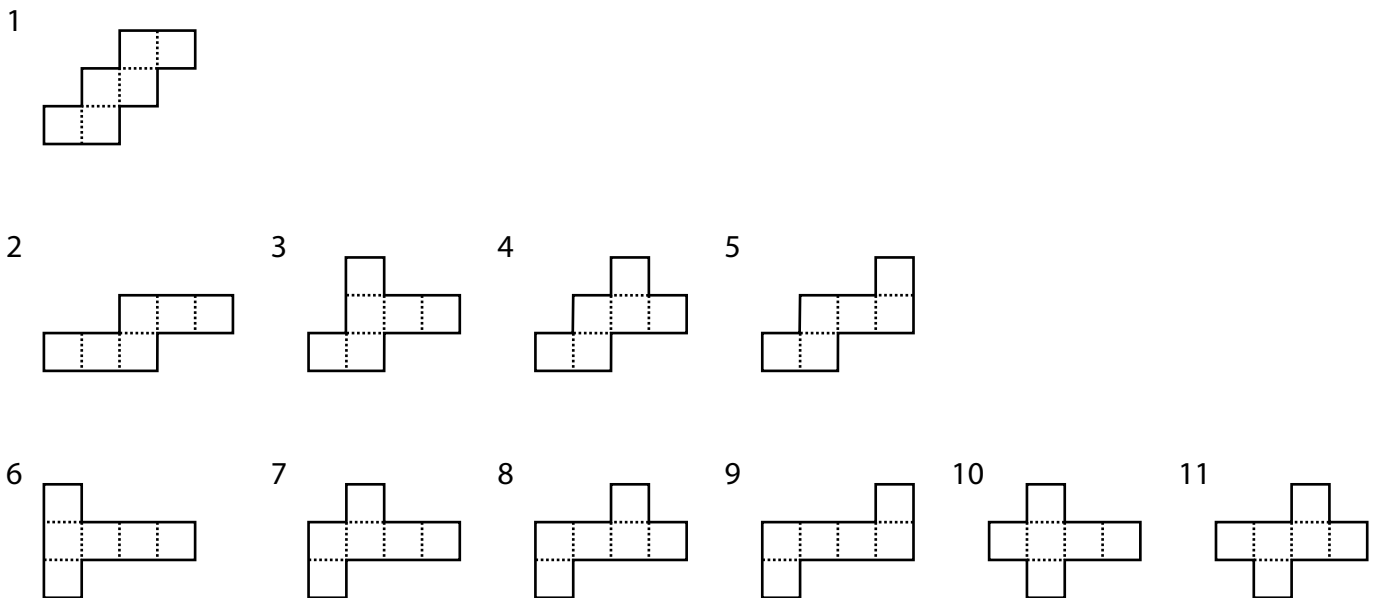
The ugly non-unique step children.

5a 5b