Lesson 14, December, 08,2009

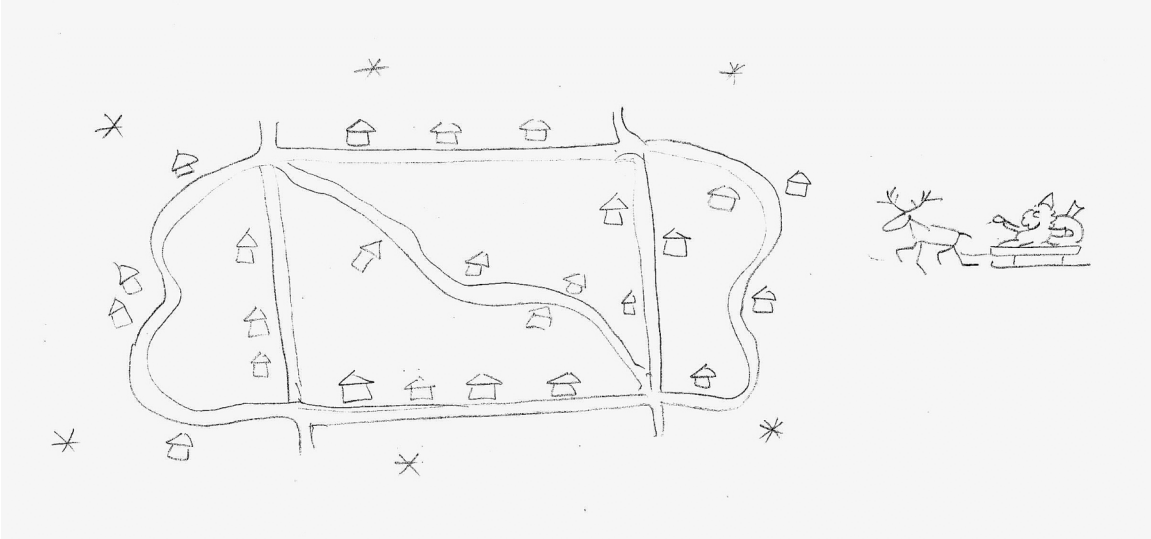
Overview

We have had both groups together. It was clear that with 40 kids in the room we can not do anything significantly difficult. We paid the tribute to math by doing one easy problem from graph theory, one not so easy counting problem, and for the rest of the workshop we worked on paper decorations for Christmas tree.

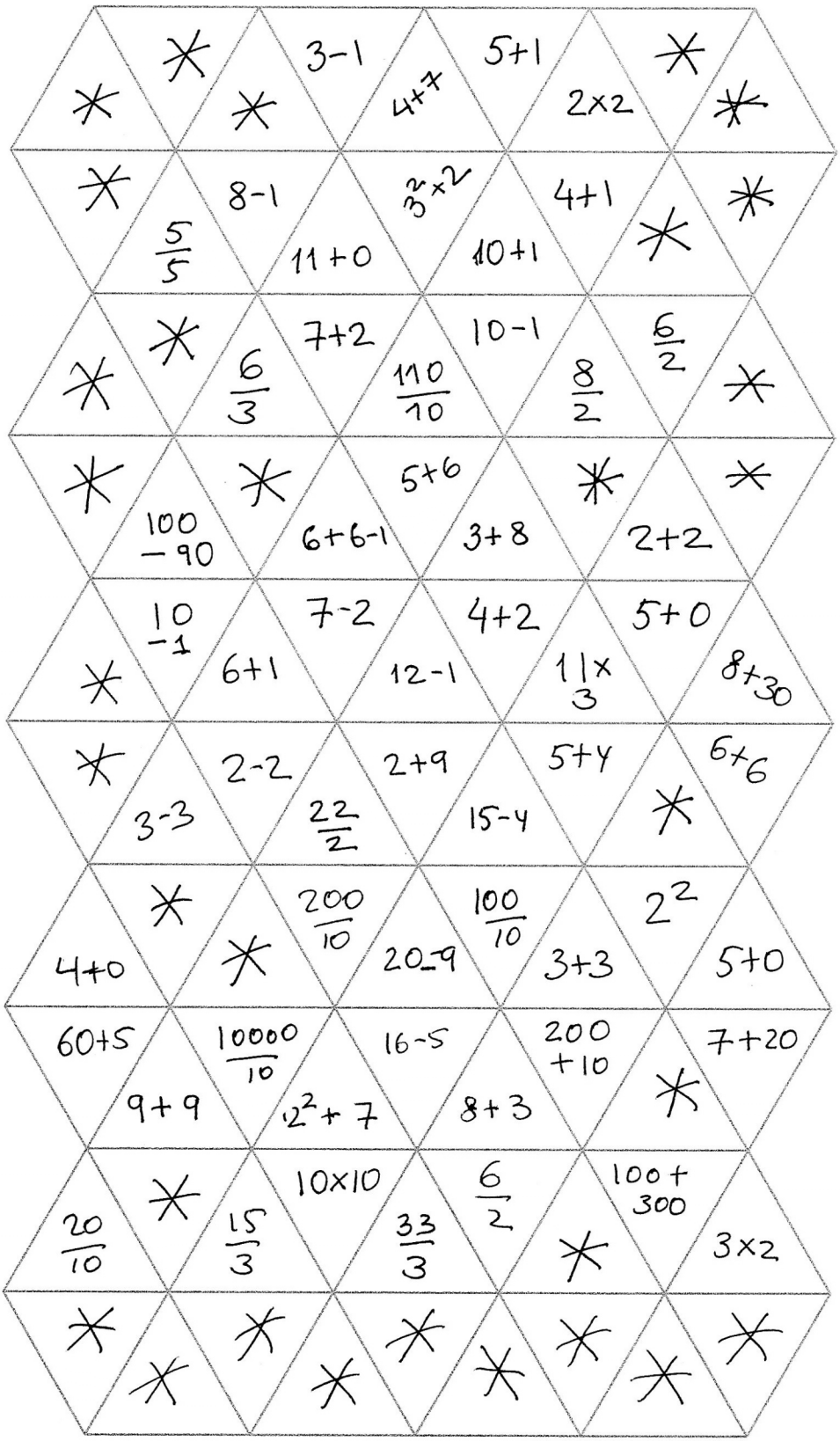
1. Kids got very interested in the Santa Claus problem. I wish we would have time to talk more about tracing the graphs. On the other hand, this is a classical topic, and I am sure that they will get a chance to learn about this more from elsewhere (or from BMC).
2. The most difficult examples for kids were 3^2+2 and 110/10 – I have noticed that many kids skipped those triangles. (The colored shape should be a Christmas tree).
3. I did not have time to write the instructions for the Fractal Christmas tree in this report – you just cut the square in the smaller and smaller triangles and glue them, each smaller one above the previous one in size to get the Christmas tree.
4. Before the class started I could not choose, which one to do: the 3D snowflake or the origami dove (it was clear that we would not be able to do both). Finally, the choice came to snowflakes, since there we have had to collaborate: each participant made one or two parts, and those parts were stapled to one big nice snowflake.

We decorated this Christmas tree at MSRI together with the older BMC groups!

1. It is a busy season for Santa Claus, he must deliver the presents to every house in every village. Santa wants to do this quickly. Can he go through the village so that he would visit every house and he would go through every street only once?

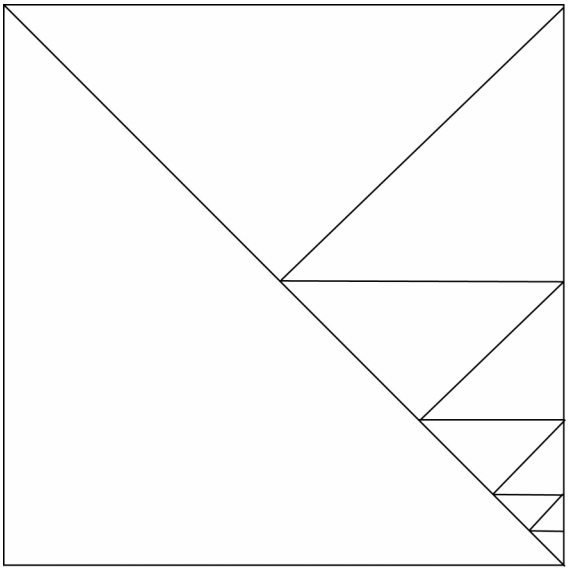


2. Color in green the triangles where the result of operations is 11.


3-1
5+1
4+7
2x2
8-1
2x2
3
4+1
5
5
11+0
10+1
7+2
10-1
6
2
6
3
110
10
8
2
5+6
100
−90
6+6-1
3+8
2+2
10
−1
7-2
4+2
5+0
6+1
12-1
11
3
8+30
2-2
2+9
5+4
6+6
3-3
22
2
15-4
200
10
100
10
2²
4+0
20-9
3+3
5+0
60+5
10000
10
16-5
200
+10
7+20
9+9
12²+7
8+3
10x10
6
2
100+
300
20
10
15
3
33
3
3x2

Paper crafts for New Year:

1. Fractal Christmas tree template.



2. Paper Dove
http://www.origami-instructions.com/origami-dove.html

3 3D Snowflake
http://www.wikihow.com/Make-a-3D-Paper-Snowflake