

- 1) The numbers in the upper layers are generated by summing up the two numbers that are ~~to~~ in the bottom layer, to the left and to the right of the wanted numbers.
- 2) You can work out the top number, only knowing the numbers in the bottom layer, by adding the two numbers at the sides in the bottom layer (~~the~~ 1 and 5 in my example above) and then adding twice the middle number in the bottom layer (3 in the example above).
- 3) If I only swap the numbers at the sides in the bottom layer, the top number will stay the same. If I changed the middle number then the top number will change.
- 4) Given any three numbers for the bottom, the largest possible top number can be found, placing the highest number of three in the middle of the bottom layer and the other two on the sides.

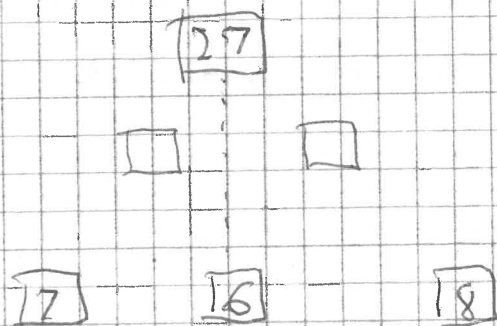
5) Given a target top number, I can quickly find three numbers for the bottom, following this method:

a) First find two possible numbers that add up to the top number (e.g. if the top number is 27, it could be 13 and 14).

b) Then find one number that can be subtracted by both numbers identified in the step above (e.g. $13 - 6 = 7$ and $14 - 6 = 8$).

c) The two result numbers obtained from the step above (e.g. 7 and 8) go to the sides of the bottom layer.

d) The number used to subtract in step b) goes in the middle.



6) For larger pyramids, the concept stays similar with numbers in the sides of the bottom layer being used once and the inner ones ~~being used~~ being used more than once, depending on the number of the layers.