Problème n°1: Fruit candy   12 Points

Let's start with the latest information: "The product of the three numbers is 36"
Students can try to find all the products of three numbers equal to 36:

 2 X 2 X 9, 3 X 3 X 4, 2 X 3 X 6, 1 X 1 X 36

"The number of candy orange is the same as that of violet sweets", so we can
eliminate the hypothesis 2 X 3 X 6
"There is an odd number of candies in the package" so can we eliminate the
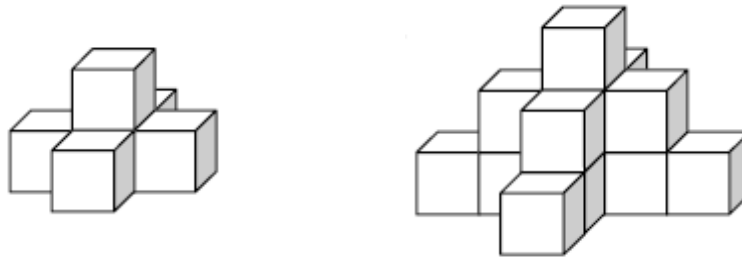assumption 3 X 3 X 4 because 4 + 3 + 3 = 10 and 10 is even and hypothesis 1 X 1 X 36 for 36 + 1 + 1 =
38 and 38 is even
So the only valid assumption 2 X 2 X 9

"The candy raspberry are the most numerous" So he has **9 candy raspberry, 2 violet sweets and 2 candy
orange.**

Problème n°2: Building kit   14 points

Note that each floor has 4 cubes more than the previous. The total number of cubes used is the sum:

1+ 5+ 9+ 13+ 17+ 21+ 25+ 29+ 33+ 37.

We can also see that there are 4 piles of 1 cube, 4 x 2 cubes, ..., 4 x 9 cubes, and a stack of 10 cubes.
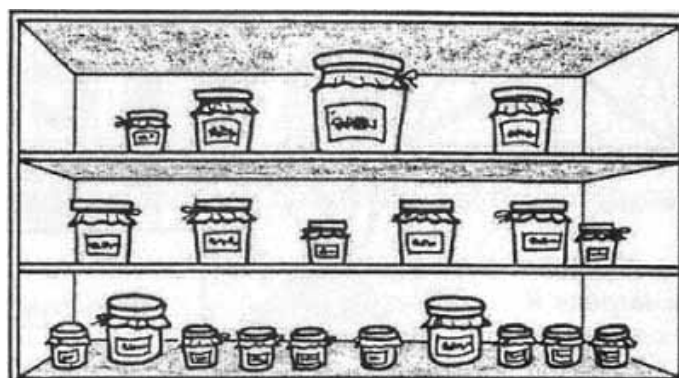The calculation can then be performed as follows:

1 + 2 + 3 + 4 + 5 + 6 + 7+ 8 + 9 = 45.   4 x 45 = 180.   180 + 10 = 190.

So you need 190 cubes to build this stack of 10 floors.
Answer: It will take 190 cubes to build the 10 floors pile

Problème n°3: Lakka Jam (Framboise arctique fréquente en Finlande)   16 points

Find the weight of a small pot a medium pot and a large pot

For an adult, the data of the problem can be expressed in the form of a system of three linear equations with three unknowns, whose resolution is not difficult.

But a more basic reasoning, accessible to students, can be performed after calculating that jam mass on each shelf is 2400 grams (8400: 3)

- Comparing the top shelf and the bottom (where there are two medium pots on each of the shelves), we deduce that a large pot equivalents to 7 small pots.
- Similarly, comparing the two bottom shelves, we deduce that two medium pots equivalents to 6 small pots, that is to say an medium pot equivalents 3 small pots.
Ultimately, we can say that the weight on each shelf equivalent to 14 small pots
therefore the weight of a small pot is **200 g** (2400: 14)
The weight of an medium pot is triple that of a small pot: **600g**
The weight of a big pot is 7 times that of a small pot: **1400g.**

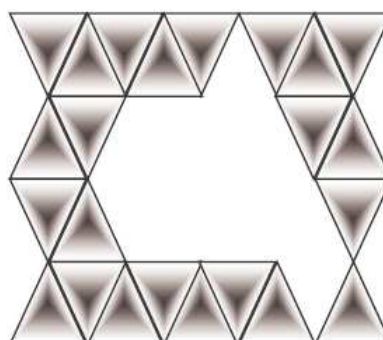## Problème n°4: Weird !   15 points

Students will seek the number which is in both the tables 2, 3, 4, 5, 6, it is 60. The response is therefore 60 + 1 = 61

Réponse : 61   (2x30) + 1 ; (3x20) + 1 ; (4x15) + 1 ; (5x12) + 1 ; (6x10) + 1

Problème n°5 : Stop gap   10 Points

Combien de triangles comme celui-ci, faut-il pour boucher le trou ?

The answer is 13.

Problème n°6 : The travallers   20 points

	Catalonia	Belgium	Finland	France
Babette	x	o	o	o
Helina	o	x	o	o
Carme	o	o	x	o
Maureen	o	o	o	x

	Car	Boat	Bus	Plane
Babette	o	o	x	o
Helina	o	x	o	o
Carme	o	o	o	x
Maureen	x	o	o	o