Subject n°33

SEQUENCE

Please do not write on the subject paper and don't forget to give back the examination paper at the end of the test.

A busy street runs along my front garden, which is very annoying.

So I've decided to plant bamboos to hide from the street and better enjoy the garden.

My front garden is 32m long, so I've decided to plant bamboos in a rectangle 32m long and 1.5m wide.

Last fall (fall 2013) I've planted 25 bamboos, each in a square of side 0.5m.

So the initial planted area is made of 25 squares of side 0.5m.

The initial height of my bamboos is 40cm, but they should eventually be 2.5m high.

Their growing period lasts three months, from march to may, and during this period their growth rate is 2cm per day.

My bamboos are not very invasive, but nevertheless, starting from their second year, they should grow new canes, so that their planted area increases each year by 20%.

I'm hoping they will quickly cover the whole rectangle I've devoted to them.

1) Draw a quick sketch of the situation : the initial planted area, the bigger rectangle they are supposed to finally cover.
2) How long will it take for my bamboos to reach their full height ?
3) How long will it take for my bamboos to cover the whole area I've devoted to them ?