

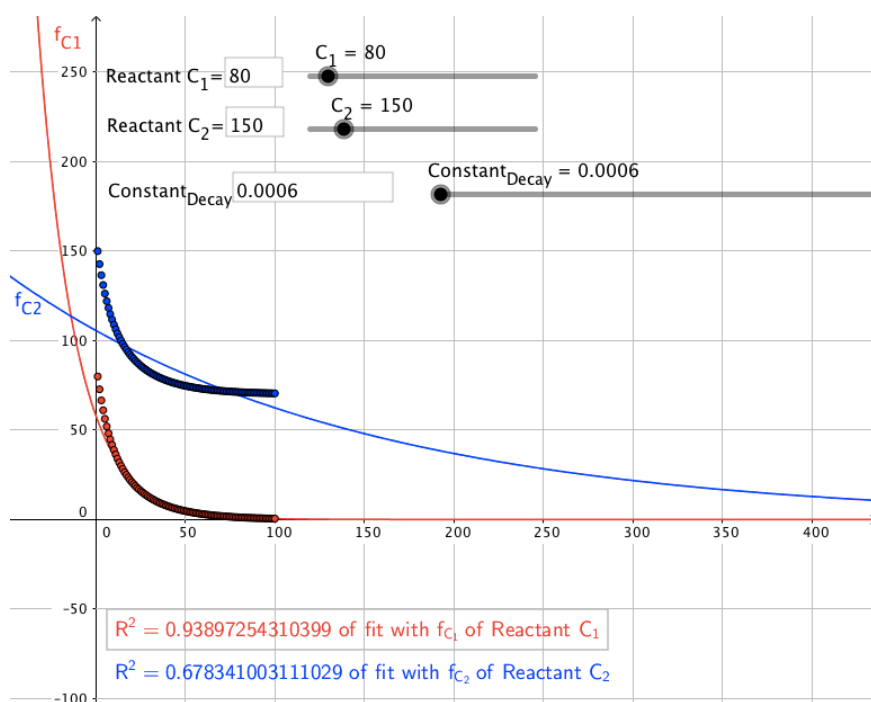
## Summary – Exponential function – STEM4youth Competition

You may have never bet that radioactive decay, banking and warfare are closely connected. Our project use widely the language of science to find out solutions and connections between them. Firstly, we set up meetings online to split the problem into minor tasks. Mailing, online sessions and common sense worked fine.

Some members of the team were very good in mathematics and they helped others in their tasks, while another one did their best in physics... Everybody could learn quite a lot from each other! However, it was decided to set up our laboratory for the experiments: spreadsheets based on GeoGebra, OpenOffice... That's how we observed several patterns and regularities which underlined processes associated to the problems proposed: banking, radioactive decay, chemistry...

For task 3 GeoGebra file was created using slider function true which we could change parameters and draw graph for different cases. In task 4 we used similar approach for radioactive decay using more complex commands in GeoGebra. For capacitors, we had to develop theory based on Ohm's law and then create spreadsheet models. In task 5 we used OpenOffice as it required lot of steps. Finally, in task 6 we proved theoretically that temperature of cooling object via time should be exponential and then showed that given data is part of an exponential function.

Exponential function can stablish completely unexpected relationships between distant concepts with nothing in common at first sight! It's awesome when you discover unknown paths which connect chemical reactants, predator-prey and cooling processes...



*GeoGebra is an interactive software whose main features are clarity and usefulness. Moreover, GeoGebra files can be easily published on the internet via GeoGebraTube.*

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