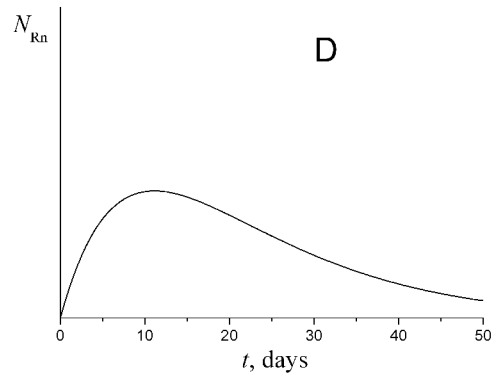
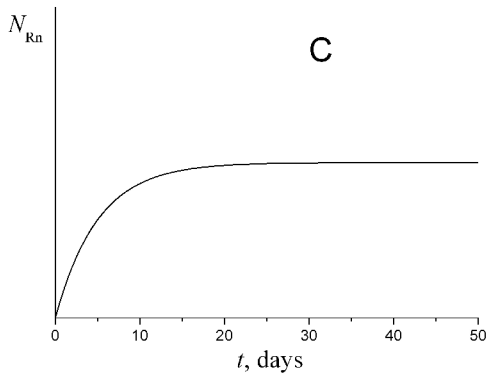
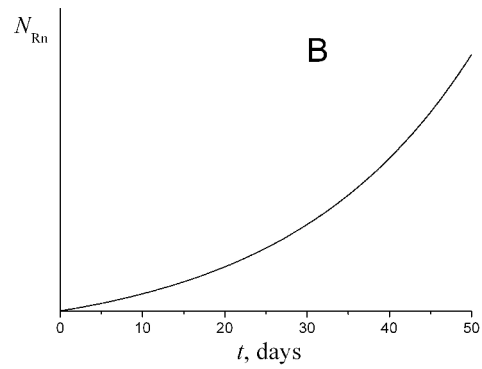
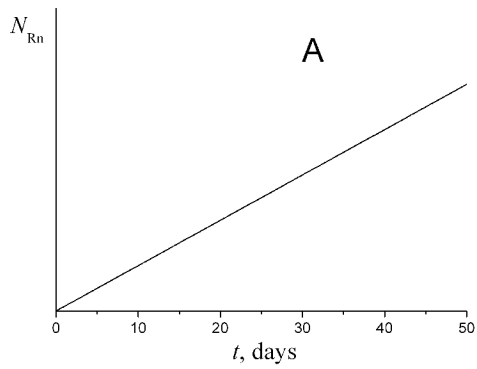
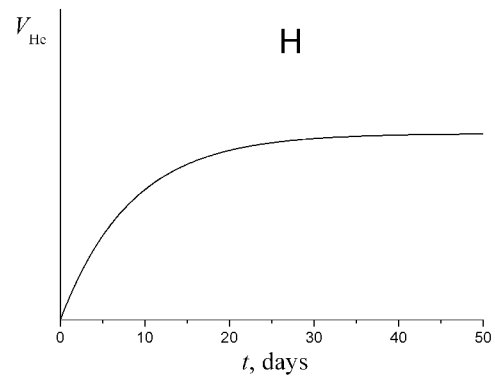
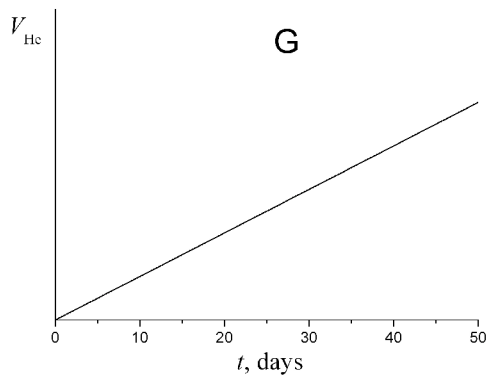
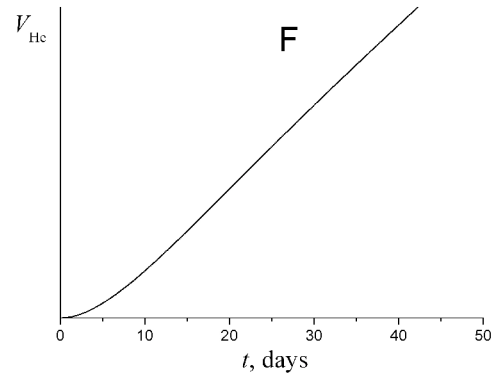
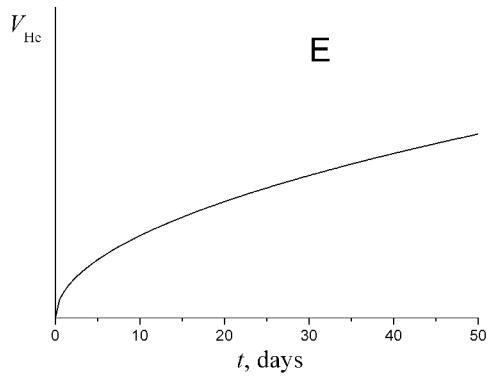




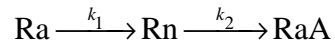
4. Choose which of the plots given below displays the time dependence of the number of radon atoms  $N_{\text{Rn}}$  in the course of the experiment.



5. Choose which of the plots given below shows the time dependence of the volume of helium  $V_{\text{He}}$  of radon atoms in the course of the experiment.



6. a) Using a short kinetic scheme



and the plot which you have selected in question 4, write a relation between the number of radon atoms at the end of experiment  $N'_{\text{Rn}}$  and the number of radium atoms  $N_{\text{Ra}}$ .

b) Evaluate  $N'_{\text{Rn}}$  using the rate of radium decay given above ( $x = 3.42 \cdot 10^{10}$   $\alpha$ -particles per gram of radium per second).

7. How many helium atoms could be formed from radon atoms remaining at the end of experiment  $N'_{\text{Rn}}$  if all these atoms had decayed to RaD?

8. Using your answers to the above questions calculate a better approximation to: a) the number of helium atoms formed; b) the Avogadro's number.