**14C Modelling with e**

1. The density of a pesticide in a section of field, $P mg/m^{2}$, can be modelled by the equation:

$$P=160e^{-0.006t}$$

In this case, $t$ is the time in days since the pesticide was first applied.

1. Estimate the density of the pesticide after 15 days
2. Interpret the meaning of the 160 in this model
3. Find $\frac{dP}{dt}$
4. Interpret the significance of the sign of your answer to part c
5. Sketch the graph of $P$ against $t$.