

## 14C Modelling with e

1. The density of a pesticide in a section of field,  $P \text{ mg/m}^2$ , 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.

- a) Estimate the density of the pesticide after 15 days

- b) Interpret the meaning of the 160 in this model

c) Find  $\frac{dP}{dt}$

d) Interpret the significance of the sign of your answer to part c

e) Sketch the graph of  $P$  against  $t$ .