

Corrigé de l'exercice p. 37 (Vol. 3)

#10

$$N = 278(1,18)^t$$

$$a) 278(1,18)^{37} = 126963 \text{ personnes}$$

$$b) 8986 = 278(1,18)^t$$

$$32,32 = 1,18^t$$

$$t = \log_{1,18} 32,32$$

$$t \approx 21 \text{ jrs}$$

#12

$$y = 200(2)^x \quad \times \text{ (1/2 heure)}$$

$$a) y = 200(2)^{14} = 3\,276\,800 \text{ bactéries}$$

$$b) 819\,200 = 200(2)^x$$

$$4096 = 2^x$$

$$x = \log_2 4096 \Rightarrow 12 \text{ demi-heure}$$

donc deux heures

#13

$$\begin{aligned} a) \quad Q &= 3(0,999876)^t \\ &= 3(0,999876)^{805} \\ &\sim 2,71 \text{ mg} \end{aligned}$$

$$b) \quad 0,25 = 3(0,999876)^t$$

$$0,0833 = (0,999876)^t$$

$$t = \frac{\log 0,0833}{\log 0,999876} \Rightarrow 20038 \text{ après sa mort.}$$

#17

$$Q = 1050(0,85)^t$$

$$a) \quad 1) = 1050(0,85)^0 = 1050 \text{ kg}$$

$$2) = 1050(0,85)^5 = 465,89 \text{ kg}$$

$$3) = 1050(0,85)^{24} = 21,24 \text{ kg}$$

$$b) \quad 1) \quad 525 = 1050(0,85)^t$$

$$0,5 = (0,85)^t$$

$$t = \frac{\log 0,5}{\log 0,85} = 4,26 \text{ mois}$$

$$2) \quad 455 = 1050(0,85)^t$$

$$0,437 = (0,85)^t$$

$$t = \frac{\log 0,437}{\log 0,85} = 5,14 \text{ mois}$$