

## la fonction exponentielle

$$\#1 \quad V_f = V_i (Base)^{\text{periode}}$$

$$a) \quad V_f = 2000 \cdot (1,1)^4 = 2928,2 \text{ hab.}$$

$$b) \quad V_f = 2000 \cdot (1,1)^8 = 4287,18 \text{ hab.}$$

$$c) \quad V_f = 2000 \cdot (1,1)^{10,5} = 5440,68 \text{ hab.}$$

$$\#2 \quad V_f = V_i (Base)^{\text{periode}}$$

$$9,5\% \rightarrow 12 \text{ mois} \quad x = 0,791\bar{6}\% \quad \text{Base} = 1 + 0,00791\bar{6} = 1,00791\bar{6}$$

$$x \rightarrow 1 \text{ mois}$$

$$V_f = 1000 (1,00791\bar{6})^{48} = \boxed{1460,10\$}$$

$\rightarrow$  nb de mois dans 4 ans

$$\#3 \quad V_f = V_i (Base)^{\text{periode}}$$

$$320 = 500 \left(\frac{4}{5}\right)^x \quad x: \text{nb de 40 ans.}$$

$$0,64 = \left(\frac{4}{5}\right)^x \Rightarrow x = \log_{\frac{4}{5}} 0,64 = 2 \text{ "40 ans"} = \boxed{80 \text{ ans}}$$

$$\#4 \quad V_f = V_i (Base)^{\text{periode}}$$

$$768 = 12 \cdot 2^x \quad x: \text{nb de 20 min.}$$

$$64 = 2^x \quad x = 6 \text{ "20 min"} = \boxed{120 \text{ min} = 2 \text{ h}}$$

$$\#5 \quad 30000 = 15 \cdot 2^{0,02t}$$

$$2000 = 2^{0,02t} \Rightarrow 0,02t = \log_2 2000$$

$$0,02t = 10,97 \Rightarrow \boxed{t = 548,29 \text{ ans}}$$

$$\#6 \quad V_f = V_i (Base)^{\text{periode}}$$

$$V_f = 36 \cdot \left(\frac{3}{4}\right)^5 = \boxed{8,54 \text{ g}}$$



→ 6 "6 mois" dans 3 ans

$$\#7 \quad V_f = 2500 (1,04)^6 = \boxed{3163,30 \$}$$

↳ 8% → 12 mois

x → 6 mois

↳ 4%

$$\#8 \quad V_f = 14000 (1-0,2)^4$$

$$= 14000 (0,8)^4 = \boxed{5734,40 \$}$$

→ 4 "5 ans" ds 20 ans

$$\#9 \quad V_f = 60 \left(\frac{3}{4}\right)^4$$

$$\boxed{V_f = 18,98 g}$$

$$\#10 \quad V_f = 6300 (1-0,02)^9$$

$$= 6300 (0,98)^9 = \boxed{5252,61 \text{ hab}}$$

$$\#11 \quad \text{OPTION 1: } V_f = 5000 (1,085)^5 = 7518,28 \$$$

15% → 15 "4 mois" dans 5 ans

$$\text{OPTION 2: } V_f = 5000 (1,0275)^{15} = 7510,99 \$$$

\* 8,25% → 12 mois

x → 4 mois

↳ 2,75%

$$\boxed{\text{OPTION 1 avec } 7,29 \$}$$

$$\#12 \quad V_f = V \cdot i (\text{Base})^{\text{periode}}$$

$$2 = 128 \left(\frac{1}{2}\right)^x \quad x: \text{nb d'heures}$$

$$0,015625 = \frac{1}{2}^x \Rightarrow x = \log_{\frac{1}{2}} 0,015625 = \boxed{6 \text{ heures}}$$

#13 croissance can base 1,05 > 1



$$\#14 \quad V_f = V_i (Base)^{periode}$$

$$V_f = 10 \left(\frac{2}{5}\right)^3 = \boxed{0,64 m}$$

$$\#15 \quad 3645 = 5 \cdot 3^x \quad x: \text{nb de 20 min}$$

$$729 = 3^x \quad x = 6 \text{ "20 min"} = \boxed{120 \text{ min ou 2 h}}$$

$$\#16 \quad V_f = V_i (Base)^{periode}$$

$$V_f = 100 (1+0,04)^{10}$$

$$= 100 (1,04)^{10} = \boxed{148,02 \$}$$

$$\#17 \quad V_f = 0,8 (1-0,01)^6$$

$$= 0,8 (0,99)^6 = \boxed{0,75 \$}$$

$$\#18 \quad V_f = 6 \cdot 2^8 \rightarrow 8 \text{ "6 h" dans 48 h}$$

$$V_f = \boxed{1536}$$

$$\#19 \quad R(t) = 100 \cdot 0,9756^{20} = \boxed{61,01 \%}$$

$$\#20 \quad V_f = 3000 \cdot (0,6)^5 = \boxed{233,28 m^3}$$

$$\#21 \quad V_f = 95 \cdot 2^{14} \rightarrow 14 \text{ "25 jours" dans 350 jours}$$

$$V_f = \boxed{1556480}$$

$$\#22 \quad V_f = V_i (Base)^{periode}$$

$$92 = v_i (1-0,04)^5$$

$$92 = v_i (0,96)^5$$

$$92 = v_i (0,81537...) \Rightarrow \boxed{v_i = 112,83}$$