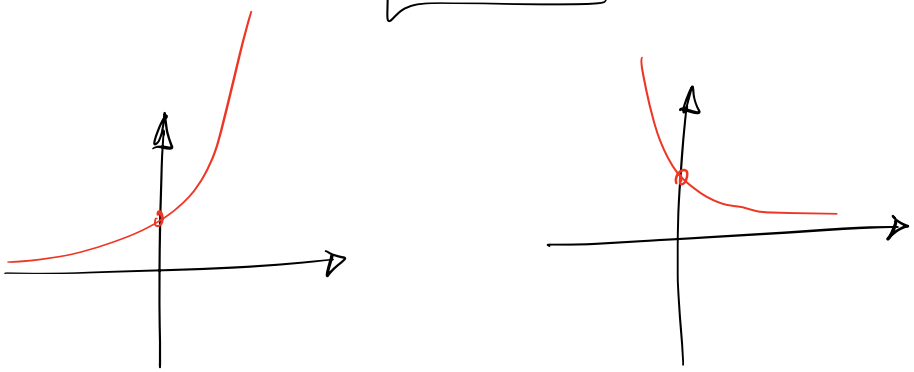
Modèle exponentiel

$$Q(t) = Q_0 \cdot a^t = Q_0 \cdot e^{c \cdot t}$$

$a > 0$ $\quad a \neq 1$ $\quad c \in \mathbb{R}^*$



Application : a) 5 bactéries

bact. double chaque heure

$Q(t) = Q_0 \cdot 2^t$

$= 5 \cdot 2^t$

$5 \cdot 2^0$	0	5
$5 \cdot 2^1$	1	10
$5 \cdot 2^2$	2	20
$5 \cdot 2^3$	3	40

b) Quantité de départ : 1052
$t = 5$ Quantité : 1534
} Modèle exp.

$Q(t) = Q_0 \cdot a^t$ $\qquad Q(0) = Q_0 = Q_0 \cdot a^0 = 1052$

$$Q(5) = 1534 = 1052 \cdot a^5$$

$$a^5 = \frac{1534}{1052} \qquad a^5 \approx 1{,}458175$$

$$a \approx 1{,}078355$$

Modèle :

$$Q(t) = 1052 \cdot 1{,}078355^t$$

$Q(t) = 2104$?

$$2104 = 1052 \cdot 1{,}078355^t \quad \Big| \div 1052$$

$$2 = 1{,}078355^t$$

$$\Rightarrow t = \log_{1{,}078355}(2)$$