d'où : $-0,0005t = \ln 0,3$ et $t = \dfrac{\ln 0,3}{-0,0005}$

$t \approx \mathbf{2\ 408\ h.}$

4. $P_{(X > 2000)}(X < 4000) =$

$$\dfrac{P((X > 2000) \cap (X < 4000))}{P(X > 2000)}$$

$P_{(X > 2000)}(X < 4000) = \dfrac{P(2000 < X < 4000)}{P(X > 2000)}$

$P_{(X > 2000)}(X < 4000) = \dfrac{e^{-0,0005 \times 2000} - e^{-0,0005 \times 4000}}{e^{-0,0005 \times 2000}}$

$P_{(X > 2000)}(X < 4000) \approx \mathbf{0,6321.}$