

$$3/ P(X \leq m) = \frac{1}{2} (=) F(m) = \frac{1}{2} (=) (m \in [0, 1] \text{ et } (1 - e^{-h(m)}) = \frac{1}{2}).$$

$$\Rightarrow m = -\frac{\ln(\frac{1}{2})}{h(2)} = 0,4150$$

$$4/ E(X) = \int_{-\infty}^{+\infty} x f(x) dx = \ln(2) \int_0^1 x e^{-h(2)x} dx$$

$$= \ln(2) \left[ -\frac{x e^{-h(2)x}}{\ln(2)} \right]_0^1 + \int_0^1 \frac{e^{-h(2)x}}{\ln(2)} dx$$

$$= -1 + \frac{1}{\ln(2)} = 0,4427$$

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