DISTRIBUTIONS DISCRÈTES							
	Support	Paramètres	FMP	Répartition	E(X)	var(X)	FGM
Bernoulli(θ)	$\{0,1\}$	$\theta \in (0,1)$	$\theta^x(1-\theta)^{1-x}$		θ	$\theta(1-\theta)$	$1-\theta+\theta e^t$
Binomiale(n,θ)	$\{0,\ldots,n\}$	$n \in \mathbb{N}, \theta \in (0,1)$	$\binom{n}{x}\theta^x(1-\theta)^{n-x}$		$n\theta$	$n\theta(1-\theta)$	$(1-\theta+\theta e^t)^n$
Poisson(λ)	$\{0,1,2,\ldots\}$	$\lambda \in \mathbb{R}^+$	$e^{-\lambda}\,\dfrac{\lambda^x}{x!}$		λ	λ	$\exp\{\lambda(e^t-1)\}$
Geométrique(θ)	$\{1,2,\ldots\}$	$\theta \in (0,1)$	$\theta(1-\theta)^{x-1}$	$1-(1-\theta)^x$	$\dfrac{1}{\theta}$	$\dfrac{1-\theta}{\theta^2}$	$\dfrac{\theta e^t}{1-e^t(1-\theta)}$
Binomiale négative(r,θ)	$\{r,r+1,\ldots\}$	$r \in \mathbb{N}, \theta \in (0,1)$	$\binom{x-1}{r-1}\theta^r(1-\theta)^{x-r}$		$\dfrac{r}{\theta}$	$\dfrac{r(1-\theta)}{\theta^2}$	$\left\{\dfrac{\theta e^t}{1-e^t(1-\theta)}\right\}^r$
ou	$\{0,1,2,\ldots\}$	$r \in \mathbb{N}, \theta \in (0,1)$	$\binom{r+x-1}{x}\theta^r(1-\theta)^x$		$\dfrac{r(1-\theta)}{\theta}$	$\dfrac{r(1-\theta)}{\theta^2}$	$\left\{\dfrac{\theta}{1-e^t(1-\theta)}\right\}^r$

Pour les distributions *continues* (voir page suivante), on définit la *fonction gamma d'Euler*, pour tout $\alpha > 0$, par

$$\Gamma(\alpha) = \int_0^\infty x^{\alpha-1}e^{-x}\,\mathrm{d}x.$$

On note aussi que la transformation *localisation/échelle* $Y = \mu + \sigma X$ donne

$$f_Y(y) = \frac{1}{\sigma}\,f_X\left(\frac{y-\mu}{\sigma}\right), \qquad F_Y(y) = F_X\left(\frac{y-\mu}{\sigma}\right), \qquad M_Y(t) = e^{\mu t}M_X(\sigma t), \qquad \mathrm{E}\,(Y) = \mu + \sigma\mathrm{E}\,(X)\,, \qquad \text{et} \qquad \mathrm{var}\,(Y) = \sigma^2\mathrm{var}\,(X)\,.$$

DISTRIBUTIONS CONTINUES							
	Support	Param.	Densité	Répartition	E(X)	var(X)	FGM
Uniforme(α, β)	(α, β)	$\alpha < \beta \in \mathbb{R}$	$\dfrac{1}{\beta - \alpha}$	$\dfrac{x - \alpha}{\beta - \alpha}$	$\dfrac{\alpha + \beta}{2}$	$\dfrac{(\beta - \alpha)^2}{12}$	$\dfrac{e^{\beta t} - e^{\alpha t}}{t(\beta - \alpha)}$
Exponentielle(β)	$\mathbb{R}^+$	$\beta \in \mathbb{R}^+$	$\frac{1}{\beta}\ \exp(-x/\beta)$	$1 - e^{-x/\beta}$	β	β^2	$(1 - \beta t)^{-1}$
Gamma(α, β)	$\mathbb{R}^+$	$\alpha, \beta \in \mathbb{R}^+$	$\dfrac{1}{\beta^\alpha \Gamma(\alpha)}\, x^{\alpha-1} e^{-x/\beta}$		$\alpha\beta$	$\alpha\beta^2$	$(1 - \beta t)^{-\alpha}$
Weibull(α, β)	$\mathbb{R}^+$	$\alpha, \beta \in \mathbb{R}^+$	$\alpha\beta x^{\alpha-1} \exp(-\beta x^\alpha)$	$1 - e^{-\beta x^\alpha}$	$\dfrac{\Gamma(1 + 1/\alpha)}{\beta^{1/\alpha}}$	$\dfrac{\Gamma(1 + 2/\alpha) - \Gamma(1 + 1/\alpha)^2}{\beta^{2/\alpha}}$	
Normale(μ, σ^2)	$\mathbb{R}$	$\mu \in \mathbb{R}, \sigma \in \mathbb{R}^+$	$\dfrac{1}{\sqrt{2\pi\sigma^2}} \exp\left\{-\dfrac{(x-\mu)^2}{2\sigma^2}\right\}$		μ	σ^2	$e^{\mu t + \sigma^2 t^2/2}$
Student(ν)	$\mathbb{R}$	$\nu \in \mathbb{R}^+$	$\dfrac{(\pi\nu)^{-1/2}\Gamma\left(\dfrac{\nu+1}{2}\right)}{\Gamma\left(\dfrac{\nu}{2}\right)\left(1 + \dfrac{x^2}{\nu}\right)^{(\nu+1)/2}}$		$0 \quad (\text{si } \nu > 1)$	$\dfrac{\nu}{\nu - 2} \quad (\text{si } \nu > 2)$	
Pareto(θ, α)	(θ, ∞)	$\theta, \alpha \in \mathbb{R}^+$	$\dfrac{\alpha\theta^\alpha}{x^{\alpha+1}}$	$1 - \left(\dfrac{\theta}{x}\right)^\alpha$	$\dfrac{\alpha\theta}{\alpha - 1}$ (si $\alpha > 1$)	$\dfrac{\alpha\theta^2}{(\alpha-1)^2(\alpha-2)}$ (si $\alpha > 2$)	
Beta(α, β)	$(0, 1)$	$\alpha, \beta \in \mathbb{R}^+$	$\dfrac{\Gamma(\alpha + \beta)}{\Gamma(\alpha)\Gamma(\beta)}\, x^{\alpha-1}(1-x)^{\beta-1}$		$\dfrac{\alpha}{\alpha + \beta}$	$\dfrac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$	