Formulaire pour le contrôle numéro 2

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Licence 1 - Semestre 2

Si $z = a + ib$, $\rho = |z| = \sqrt{a^2 + b^2}$

Si $z = a + ib$, $\theta = \arg(z)$ vérifie $\cos\theta = \dfrac{a}{\sqrt{a^2 + b^2}}$

Si $z = a + ib$, $\theta = \arg(z)$ vérifie $\sin\theta = \dfrac{b}{\sqrt{a^2 + b^2}}$

$\cos 0 = 1$ et $\sin 0 = 0$	$\cos\pi = -1$ et $\sin\pi = 0$
$\cos\frac{\pi}{6} = \frac{\sqrt{3}}{2}$ et $\sin\frac{\pi}{6} = \frac{1}{2}$	$\cos\frac{-\pi}{6} = \frac{\sqrt{3}}{2}$ et $\sin\frac{-\pi}{6} = -\frac{1}{2}$
$\cos\frac{\pi}{4} = \frac{\sqrt{2}}{2}$ et $\sin\frac{\pi}{4} = \frac{\sqrt{2}}{2}$	$\cos\frac{-\pi}{4} = \frac{\sqrt{2}}{2}$ et $\sin\frac{-\pi}{4} = -\frac{\sqrt{2}}{2}$
$\cos\frac{\pi}{3} = \frac{1}{2}$ et $\sin\frac{\pi}{3} = \frac{\sqrt{3}}{2}$	$\cos\frac{-\pi}{3} = \frac{1}{2}$ et $\sin\frac{-\pi}{3} = -\frac{\sqrt{3}}{2}$
$\cos\frac{\pi}{2} = 0$ et $\sin\frac{\pi}{2} = 1$	$\cos\frac{-\pi}{2} = 0$ et $\sin\frac{-\pi}{2} = -1$
$\cos\frac{2\pi}{3} = -\frac{1}{2}$ et $\sin\frac{2\pi}{3} = \frac{\sqrt{3}}{2}$	$\cos\frac{-2\pi}{3} = -\frac{1}{2}$ et $\sin\frac{-2\pi}{3} = -\frac{\sqrt{3}}{2}$
$\cos\frac{3\pi}{4} = -\frac{\sqrt{2}}{2}$ et $\sin\frac{3\pi}{4} = \frac{\sqrt{2}}{2}$	$\cos\frac{-3\pi}{4} = -\frac{\sqrt{2}}{2}$ et $\sin\frac{-3\pi}{4} = -\frac{\sqrt{2}}{2}$
$\cos\frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$ et $\sin\frac{5\pi}{6} = \frac{1}{2}$	$\cos\frac{-5\pi}{6} = -\frac{\sqrt{3}}{2}$ et $\sin\frac{-5\pi}{6} = -\frac{1}{2}$

$A_p^n = \dfrac{n!}{(n-p)!}$ $\qquad$ $C_n^p = \dfrac{n!}{p!(n-p)!}$

Si $X \sim \mathscr{B}(n,p)$, alors $X(\Omega) = [\![0;n]\!]$

Si $X \sim \mathscr{B}(n,p)$, alors $p(X{=}k) = C_n^k p^k (1-p)^{n-k}$

Si $X \sim \mathscr{B}(n,p)$, alors $E(X) = np$

Si $X \sim \mathscr{B}(n,p)$, alors $V(X) = np(1-p)$

Si $X \sim \mathscr{H}(N,n,p)$, alors $\min(X(\Omega)) = \max\{0; n-(1-p)N\}$

Si $X \sim \mathscr{H}(N,n,p)$, alors $\max(X(\Omega)) = \min\{n; pN\}$

Si $X \sim \mathscr{H}(N,n,p)$, alors $p(X{=}k) = \dfrac{C_{Np}^k C_{N-Np}^{n-k}}{C_N^n}$

Si $X \sim \mathscr{H}(N,n,p)$, alors $E(X) = np$

Si $X \sim \mathscr{H}(N,n,p)$, alors $V(X) = np(1-p)\dfrac{N-n}{N-1}$

Si $X \sim \mathscr{G}(p)$, alors $X(\Omega) = \mathbb{N}^*$

Si $X \sim \mathscr{G}(p)$, alors $p(X{=}k) = (1-p)^{k-1}p$

Si $X \sim \mathscr{G}(p)$, alors $E(X) = \dfrac{1}{p}$

Si $X \sim \mathscr{G}(p)$, alors $V(X) = \dfrac{1-p}{p^2}$

Si $X \sim \mathscr{P}(\lambda)$, alors $X(\Omega) = \mathbb{N}^*$

Si $X \sim \mathscr{P}(\lambda)$, alors $p(X{=}k) = \dfrac{e^{-\lambda}\lambda^k}{k!}$

Si $X \sim \mathscr{P}(\lambda)$, alors $E(X) = \lambda$

Si $X \sim \mathscr{P}(\lambda)$, alors $V(X) = \lambda$