X

$$E[X]=\sum_{k=1}^{\infty}P(X\geq k)$$

X

1) $E(X)=\int_0^{\infty}(1-F(x))dx$

2) $E(X^n)=\int_0^{\infty}nx^{n-1}\big(1-F(x)\big)dx \quad (n\geq 1)$

A,B,C

2 3 2 A

A

B C 2/3

“B ” 1/2

A

AAAA BBBB CCCC

0.3,0.4,0.3

0.6 0.2

ABCA AAAA

0

S_0 1 S_1

$$S_1=\begin{cases} u * S_0 & p_1 \\ d * S_0 & p_2 \end{cases} \quad (*)$$

$u > 1, 0 < d < 1, 1 > p_1 > 0, p_1 + p_2 = 1.$

(1) $(S_1 - S_0)/S_0$

(2) K $(*)$ S_0 S_1

$$f = E[\max(S_1 - K, 0)]$$

f K (convex)

Y $E(Y)$ $Y = \sum_{k=1}^{N} X_k$ N , . N

, $E(N)$. : $E(Y) = \sum_{k=1}^{\infty} P(N \geq k) E(X_k)$

ξ

$$f(x) = \begin{cases} \lambda e^{-\lambda x}, x \geq 0; \\ 0, \quad x < 0. \end{cases}$$

a, b $Y_1, Y_2, aY_1 + bY_2$

$$E[\, aY_1 + bY_2 | X] = aE[Y_1|X] + bE[Y_2|X]$$

X, Y

$$f_{XY}(x,y) = \begin{cases} \frac{xy}{9}, & 0 \leq x \leq 2, 0 \leq y \leq 3 \\ 0, & \end{cases}$$

X Y