U2 Variables Aleatorias

Tabla de contenido

[2.3 OBTIENE EL VALOR ESPERADO DE LA VARIABLE ALEATORIA DISCRETA INVOLUCRADA, SIN ERROR DE CONCEPTO EN LOS ELEMENTOS QUE LO INTEGRAN, EVIDENCIANDO EL VALOR DE LA HONRADEZ. 2](#_Toc70060734)

[2.3.1 Función de densidad discreta 2](#_Toc70060735)

[2.3.2 Función de densidad conjunta 5](#_Toc70060736)

[2.3.3 Variables aleatorias independientes 11](#_Toc70060737)

[2.3.4 ESPERANZA MATEMATICA O VALOR ESPERADO DE UNA VARIABLE ALEATORIA DISCRETA 12](#_Toc70060738)

[2.3.4 INTERPRETACION DE ESPERANZA O VALOR ESPERADO DE UNA VARIABLE ALEATORIA DISCRETA 14](#_Toc70060739)

[2.4.5 Definiciones de esperanza matemática (variables aleatorias discretas) 16](#_Toc70060740)

[2.5 OBTIENE LA VARIANZA DE LA VARIABLE ALEATORIA DISCRETA INVOLUCRADA, SIN ERROR DE CONCEPTO. 16](#_Toc70060741)

[2.5.1 Propiedades de la esperanza matemática 16](#_Toc70060742)

[2.5.2 Momentos 22](#_Toc70060743)

[2.5.3 Varianza de una variable aleatoria 24](#_Toc70060744)

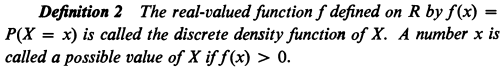
[2.2 REDACTA EN MEDIA CUARTILLA LA DEFINICION DE VARIABLE ALEATORIA CONTINUA Y DARA UN EJEMPLO DE FENOMENO QUE PRESENTE ESTE TIPO DE VARIABLE. 25](#_Toc70060745)

[2.4 OBTIENE EL VALOR ESPERADO DE LA VARIABLE ALEATORIA CONTINUA INVOLUCRADA, SIN ERROR DE CONCEPTO. 26](#_Toc70060746)

[2.6 OBTIENE LA VARIANZA DE LA VARIABLE ALEATORIA CONTINUA INVOLUCRADA, SIN ERROR DE CONCEPTO. 26](#_Toc70060747)

## 2.3 OBTIENE EL VALOR ESPERADO DE LA VARIABLE ALEATORIA DISCRETA INVOLUCRADA, SIN ERROR DE CONCEPTO EN LOS ELEMENTOS QUE LO INTEGRAN, EVIDENCIANDO EL VALOR DE LA HONRADEZ.

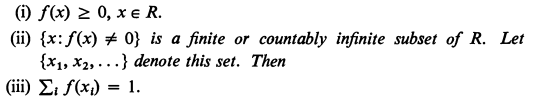
### 2.3.1 Función de densidad discreta

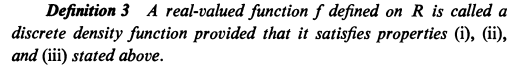


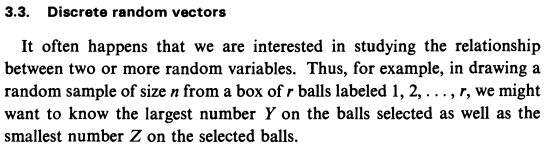


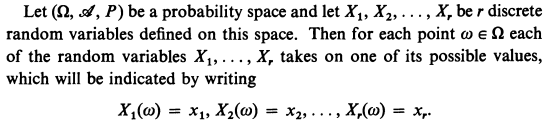
[REF: Hoel, Sidney, Stone, Pág. 54]

La función de densidad de una variable aleatoria discreta X tiene las tres propiedades siguientes:



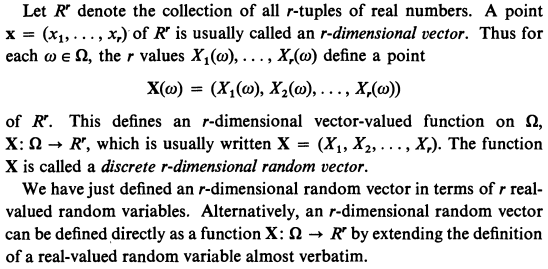


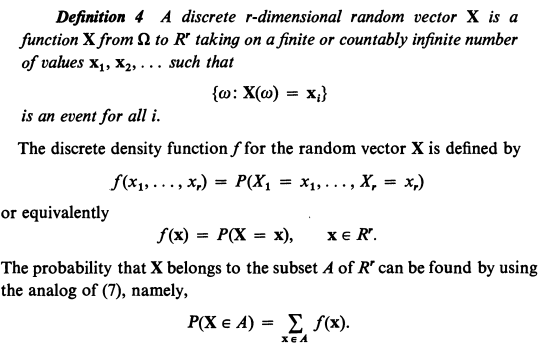


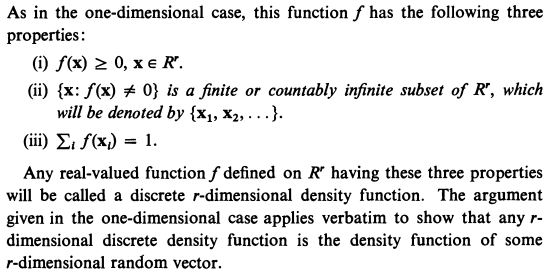


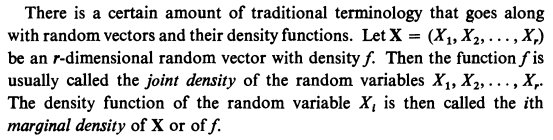










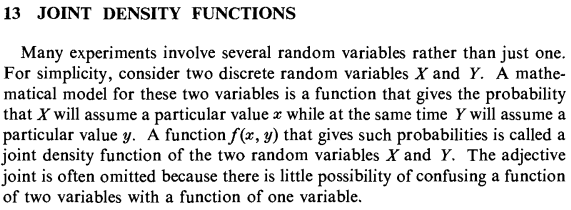


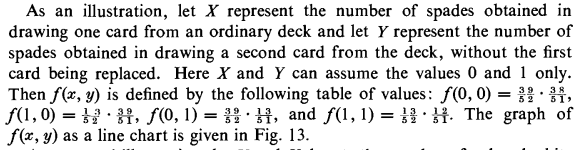
[REF. Hoel, Sidney, Port, Stone, pág. 62]

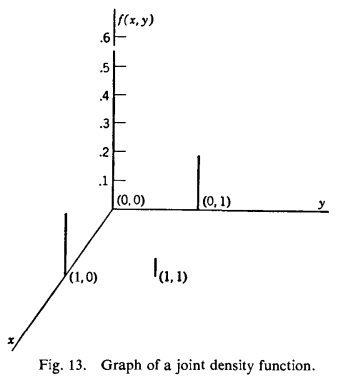
[REF. Hoel, págs. 15, 31]

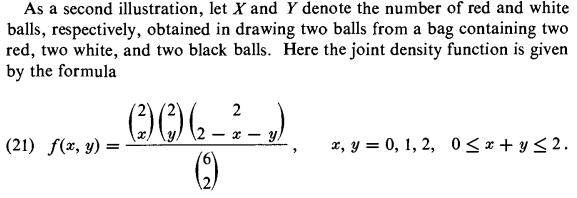


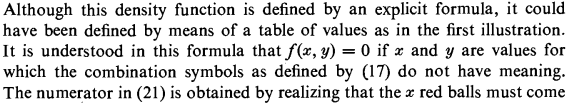
### 2.3.2 Función de densidad conjunta



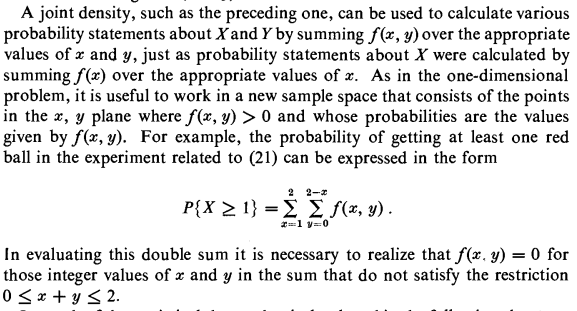


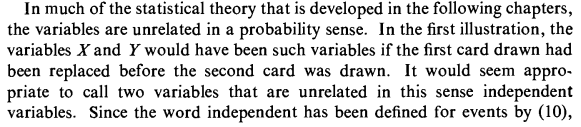


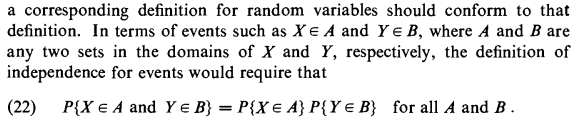


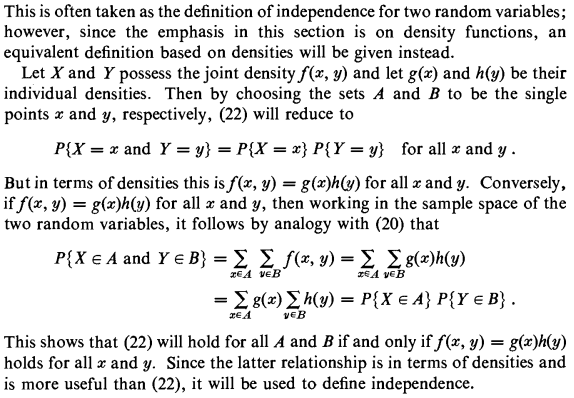


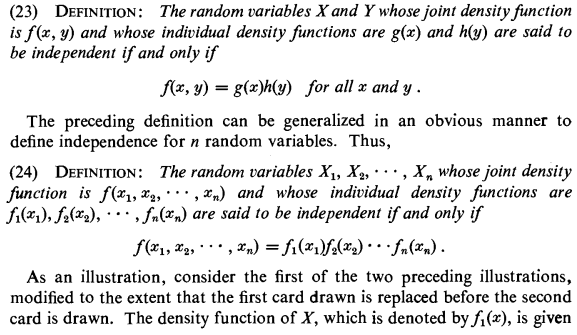


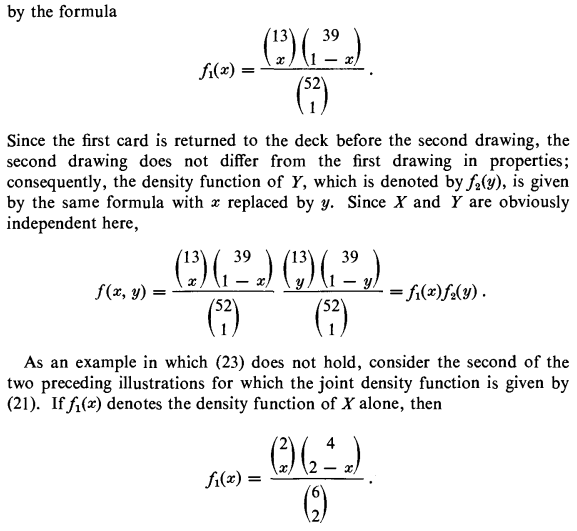


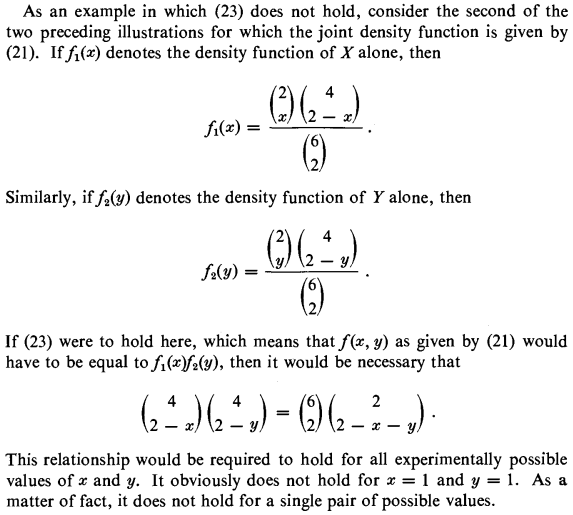






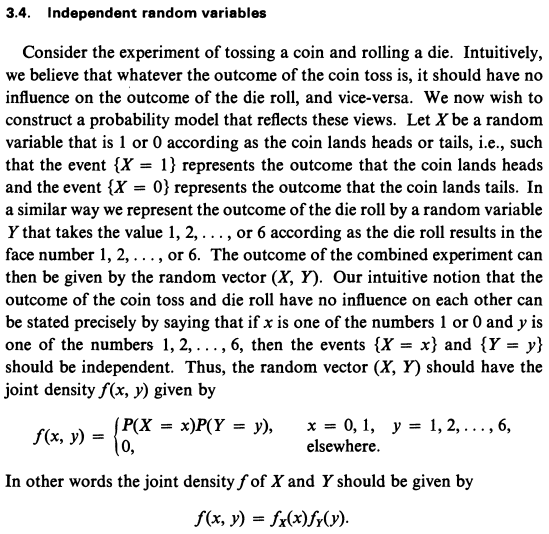


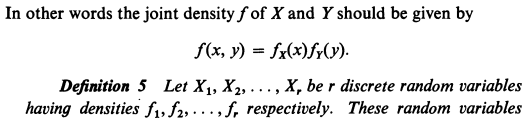


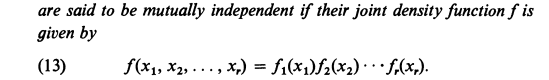


[REF. Hoel, Sidney, Stone, pág. 63]

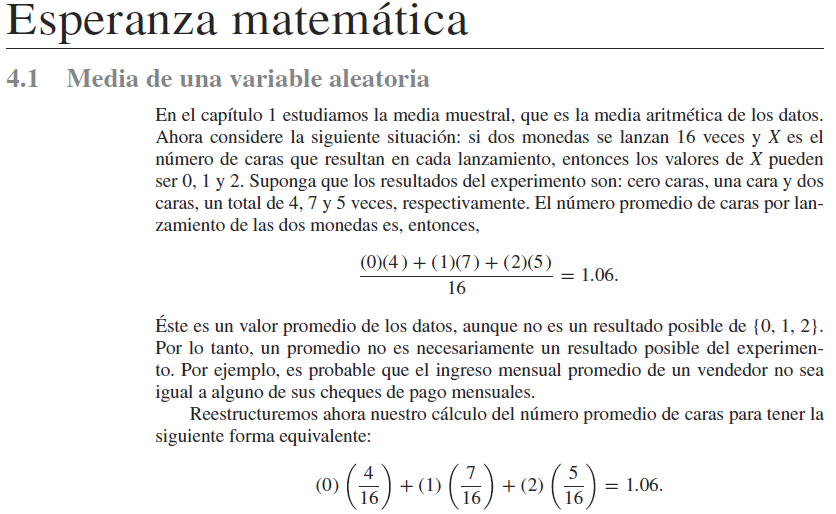
### 2.3.3 Variables aleatorias independientes

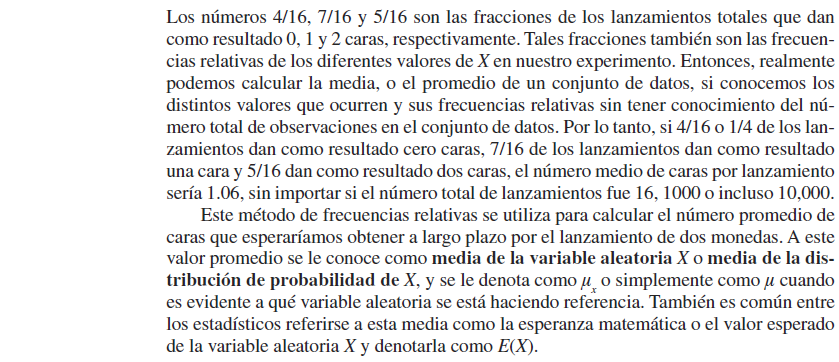


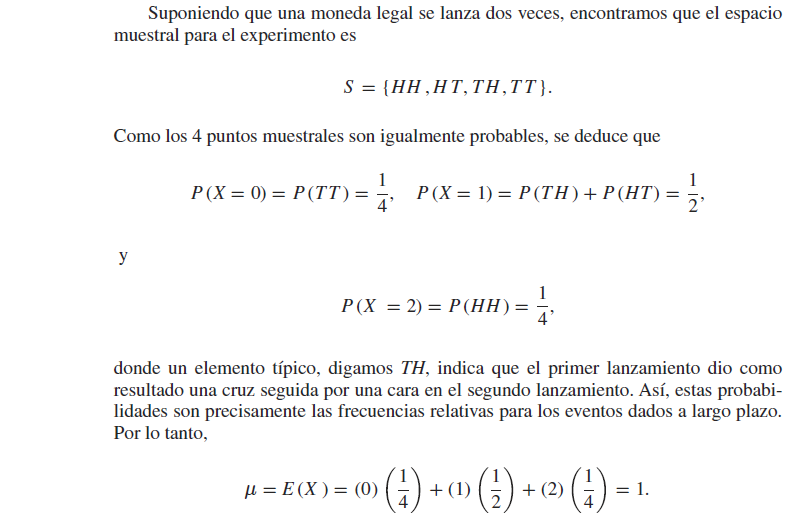


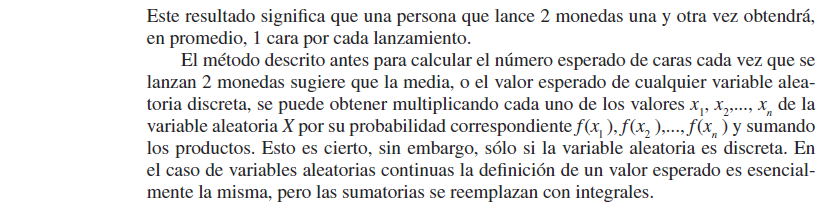


### 2.3.4 ESPERANZA MATEMATICA O VALOR ESPERADO DE UNA VARIABLE ALEATORIA DISCRETA

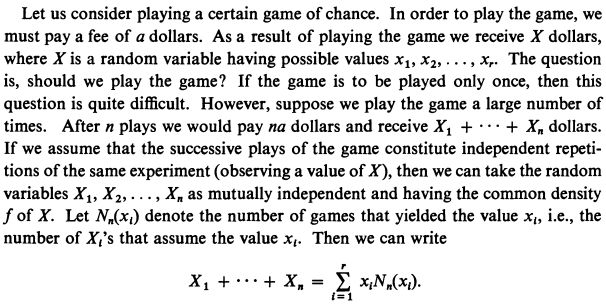


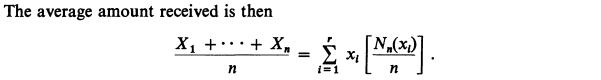


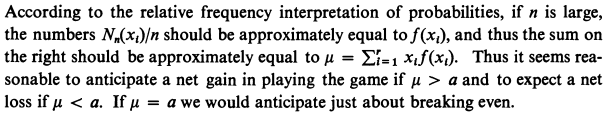




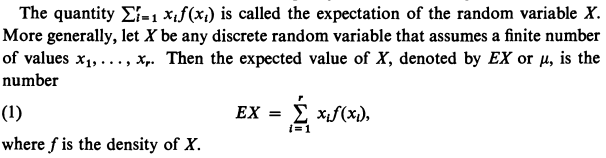
### 2.3.4 INTERPRETACION DE ESPERANZA O VALOR ESPERADO DE UNA VARIABLE ALEATORIA DISCRETA



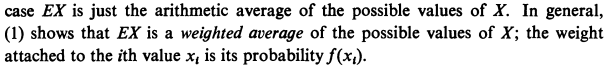


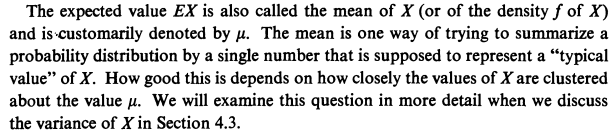


breaking even: salir sin ganar ni perder.



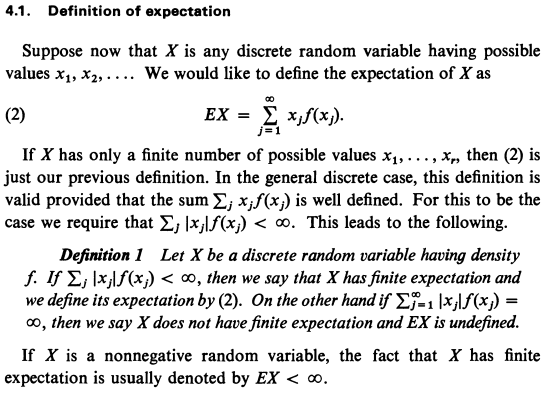






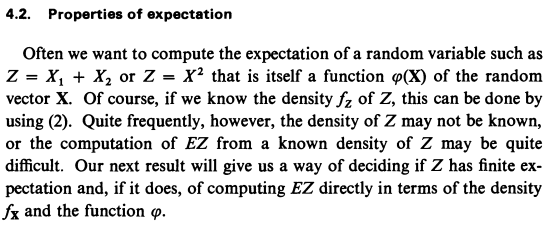
(Section 4.3 Moments, pag. 92 de [Hoel,Port,Stone])

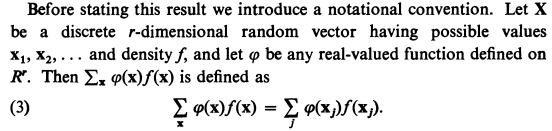
### 2.4.5 Definiciones de esperanza matemática (variables aleatorias discretas)



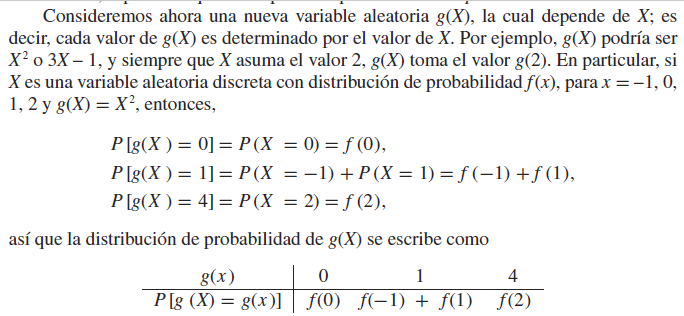
## 2.5 OBTIENE LA VARIANZA DE LA VARIABLE ALEATORIA DISCRETA INVOLUCRADA, SIN ERROR DE CONCEPTO.

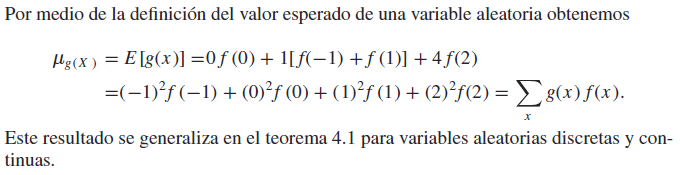
### 2.5.1 Propiedades de la esperanza matemática

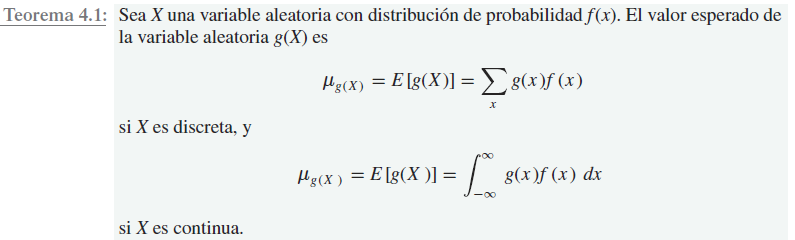


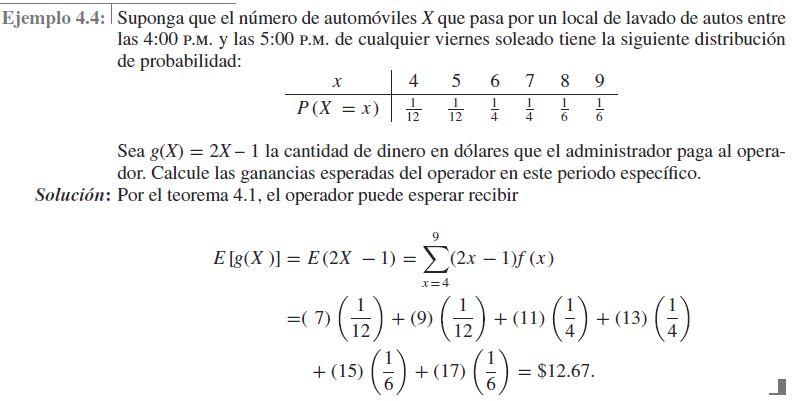


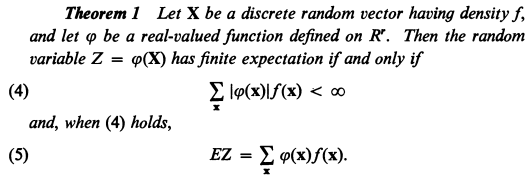
Considérese el siguiente ejemplo:

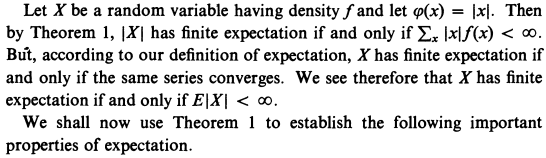


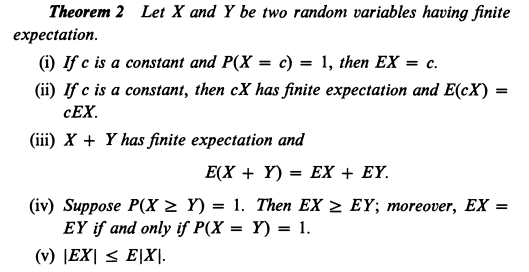


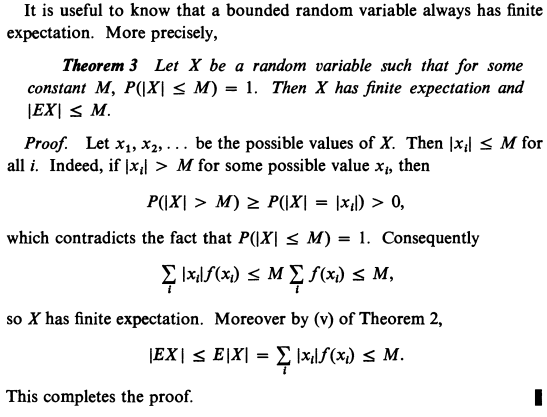


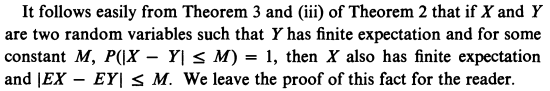


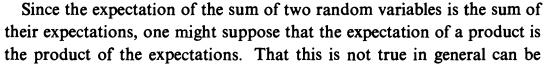


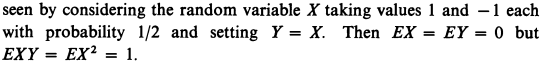


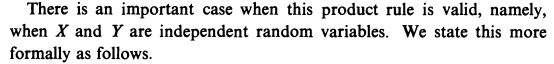


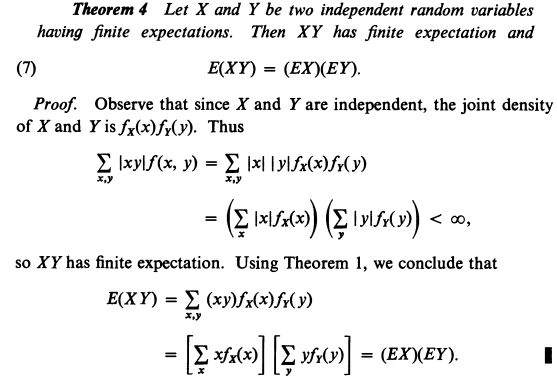


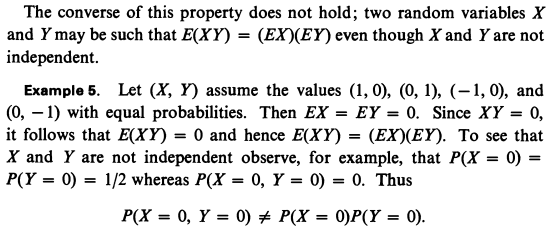


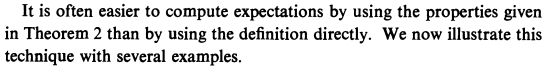




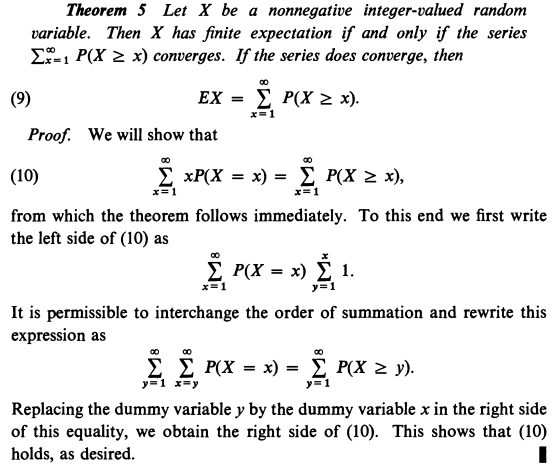




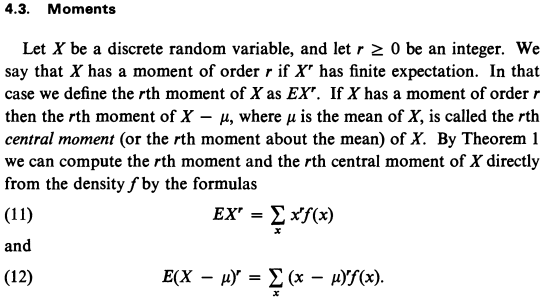


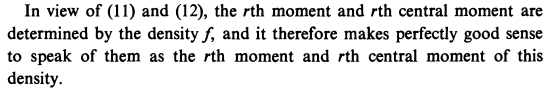


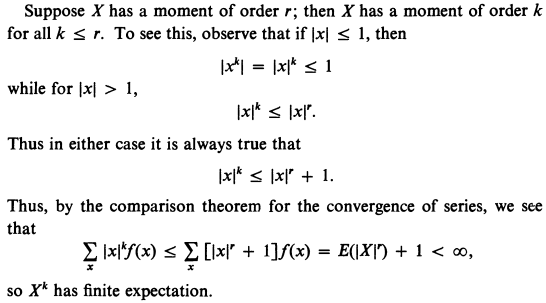
[REF. Hoel, Sidney, Stone, pág. 89]

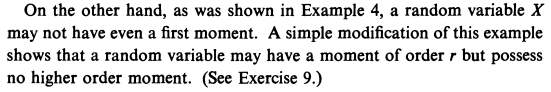


### 2.5.2 Momentos

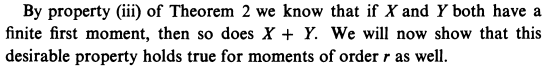








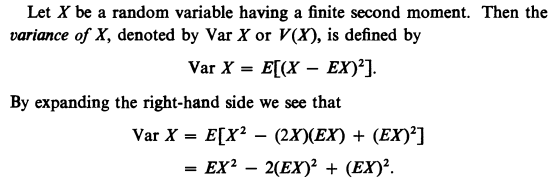
REF. Hoel, Sidney, Stone, pág. 92

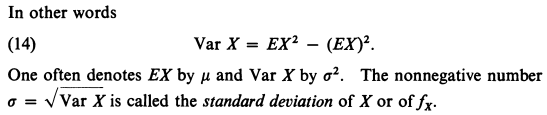


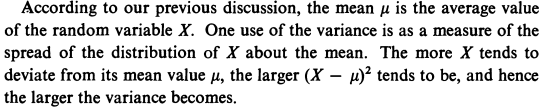


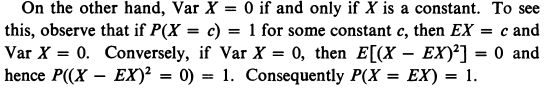


### 2.5.3 Varianza de una variable aleatoria

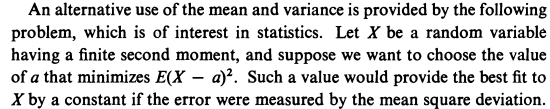


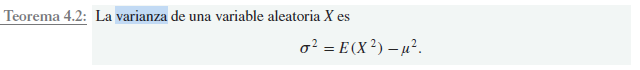


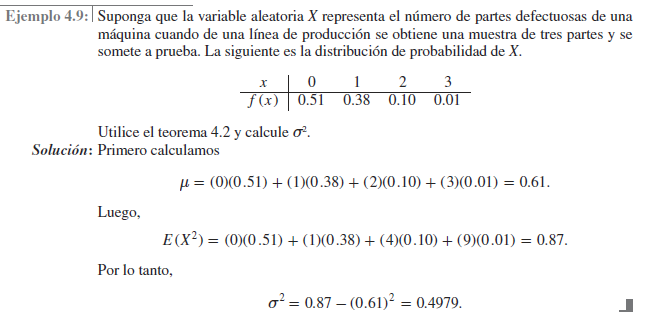




[REF. Hoel, Sidney, Stone, pág.94]







[REF. Walpole, pág. 121]

## 2.2 REDACTA EN MEDIA CUARTILLA LA DEFINICION DE VARIABLE ALEATORIA CONTINUA Y DARA UN EJEMPLO DE FENOMENO QUE PRESENTE ESTE TIPO DE VARIABLE.

## 2.4 OBTIENE EL VALOR ESPERADO DE LA VARIABLE ALEATORIA CONTINUA INVOLUCRADA, SIN ERROR DE CONCEPTO.

## 2.6 OBTIENE LA VARIANZA DE LA VARIABLE ALEATORIA CONTINUA INVOLUCRADA, SIN ERROR DE CONCEPTO.

REFERENCIAS

[Hoel, Sidney, Stone] Hoel, P. G., & Sidney, C. P., & Stone, C. J. (1971). Introduction to Probability Theory (1/a edición). Houghton Mifflin Company.

[Hoel] Hoel, P. G. (1971). Introduction to Mathematical Statistics (4/a edición). John Wiley and Sons.