

# TRABAJO 2

## TEOREMA CENTRAL DEL LIMITE

### PRUEBAS DE NORMALIDAD

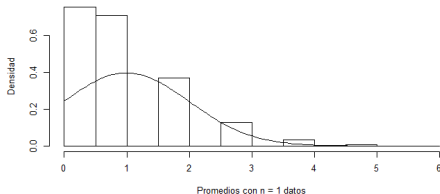
Kevin Steven García  
Cesar Andres Saavedra

Universidad del Valle  
Estadística  
Simulación Estadística

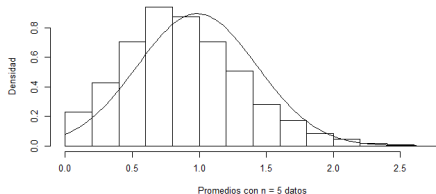
Mayo 2018

# Simulación distribución Poisson( $\lambda = 1$ )

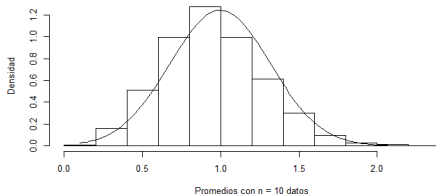
**Media = 0.9938**  
**Varianza = 1.009**



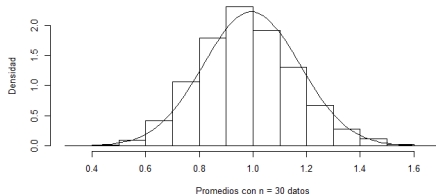
**Media = 0.9833**  
**Varianza = 0.1979**



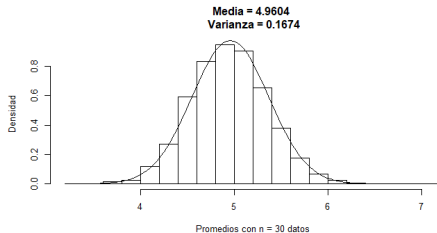
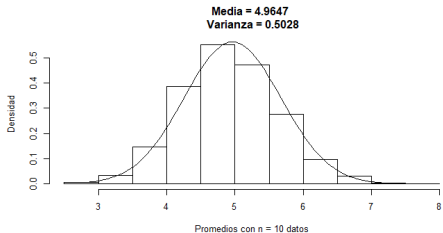
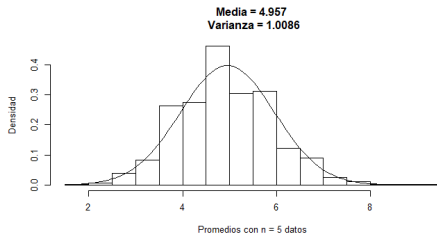
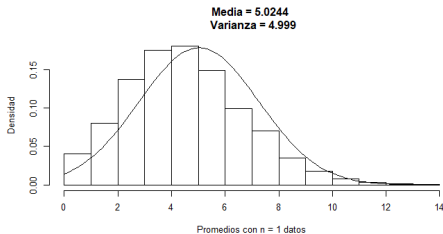
**Media = 0.9968**  
**Varianza = 0.103**



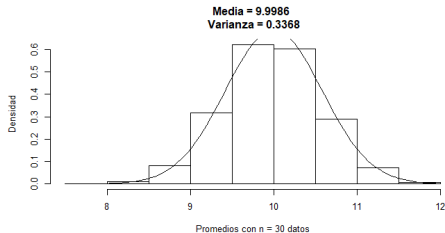
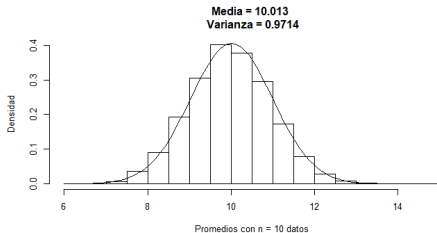
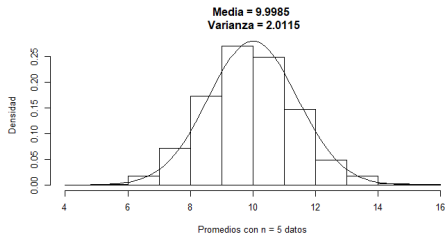
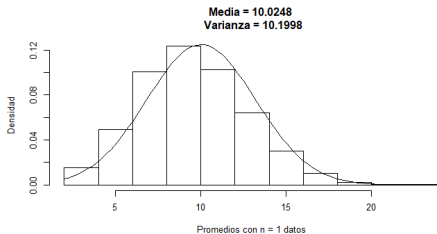
**Media = 0.9948**  
**Varianza = 0.0321**



# Simulación distribución Poisson( $\lambda = 5$ )

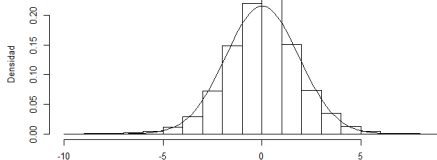


# Simulación distribución Poisson( $\lambda = 10$ )



# Simulación distribución Logística( $\alpha = 0, \beta = 1$ )

Media = 0.0206  
Varianza = 3.4245



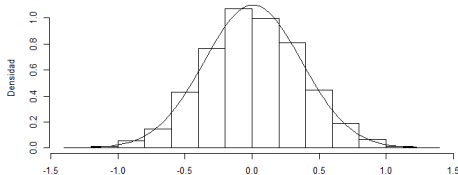
Promedios con n = 1 datos

Media = 0.003  
Varianza = 0.3299



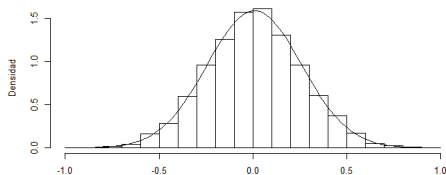
Promedios con n = 10 datos

Media = 0.0083  
Varianza = 0.1313



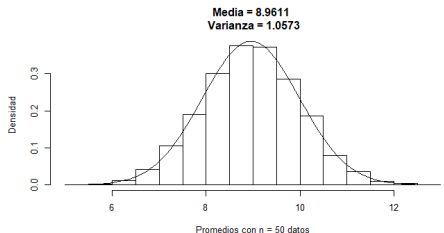
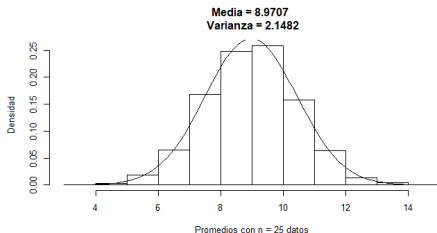
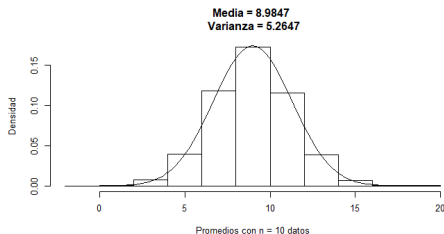
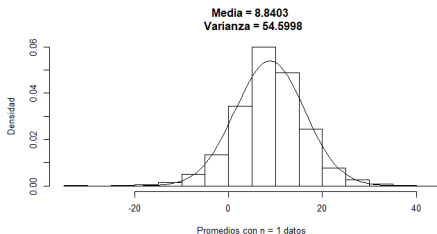
Promedios con n = 25 datos

Media = 0.0074  
Varianza = 0.0633

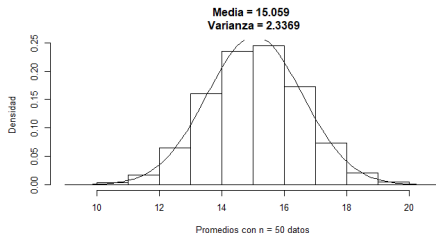
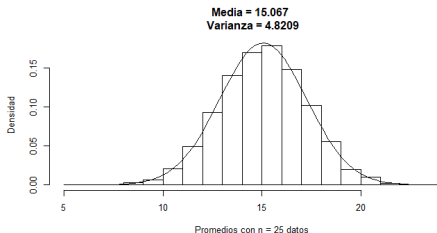
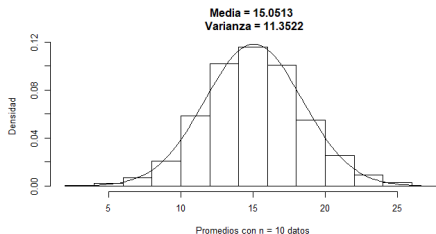
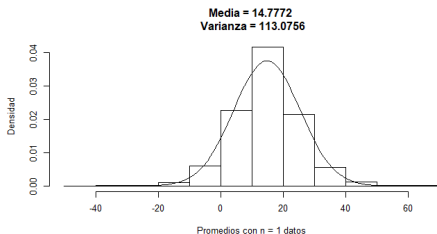


Promedios con n = 50 datos

# Simulación distribución Logística( $\alpha = 9, \beta = 4$ )



# Simulación distribución Logística( $\alpha = 15, \beta = 6$ )



# Resultados prueba de Cramér-Von Mises para la distribución Poisson

	n=1		n=5		n=10		n=30	
Parámetro	W	P-Valor	W	P-Valor	W	P-Valor	W	P-valor
$\lambda=1$	413.11	0.09893	684.06	0.1594	773.64	0.1755	867.2	0.1907
$\lambda=5$	1574.2	0.2727	1665.3	0.2805	1666.5	0.2806	1666.6	0.2806
$\lambda=10$	1665.5	0.2805	1666.7	0.2806	1666.7	0.2806	1666.7	0.2806

Figura: Comparación resultados prueba de Cramér-Von Mises



# Resultados prueba de Cramér-Von Mises para la distribución Logística

	n=1		n=10		n=25		n=50	
Parámetro	W	P-Valor	W	P-Valor	W	P-Valor	W	P-valor
$\alpha=0, \beta=1$	34.305	0.00003161	44.849	0.0002001	123.58	0.01235	186.76	0.03106
$\alpha=9, \beta=4$	1119.3	0.2254	1664.4	0.2805	1666.7	0.2806	1666.7	0.2806
$\alpha=15, \beta=6$	1254.3	0.2411	1666.6	0.2806	1666.7	0.2806	1666.7	0.2806

Figura: Comparación resultados prueba de Cramér-Von Mises