

Using the TI-83/TI-84 with Probability Distributions for Discrete Random Variables

Read the sections in your text on "Using the TI-83/TI-84 Graphing Calculator," and step through the examples.

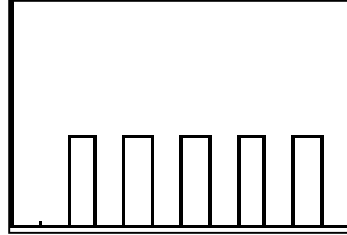
PP. 178-179: Calculating the Mean and Standard Deviation

PP. 193-194: Binomial Probabilities

Example 1. Discrete Uniform Distribution

x	P(x)
2	0.2
4	0.2
6	0.2
8	0.2
10	0.2

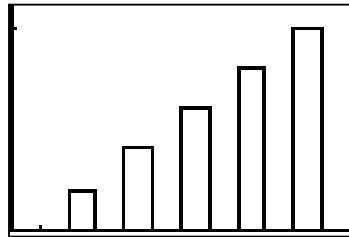
L1	L2	L3	Z
2	0.2		
4	0.2		
6	0.2		
8	0.2		
10	0.2		
-----			
L2(6) =			



1-Var Stats	
$\bar{x}$	=6
$\Sigma x$	=6
$\Sigma x^2$	=44
Sx	=
$\sigma x$	=2.828427125
$\downarrow n$	=1

Graph of P(x)

L1	L2	L3	Z
2	0.2	2	
4	0.4	4	
6	0.6	6	
8	0.8	8	
10	1.0	10	
-----			
L2(1) = .2			



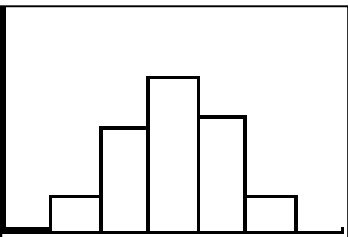
Cumulative Probabilities

$P(x \leq 6) = \underline{\hspace{2cm}}$   
 $P(\bar{x} - \sigma \leq x \leq \bar{x} + \sigma) = \underline{\hspace{2cm}}$   
 $P(\bar{x} - 2\sigma \leq x \leq \bar{x} + 2\sigma) = \underline{\hspace{2cm}}$

Example 2. A Binomial Random Variable with Number of Trials  $n = 5$  and Probability of a Success on a Single Trial  $p = 0.6$ .

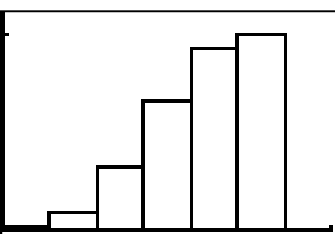
L1	L2	L3	Z
0	.01024	.01024	
1	.07680	.07680	
2	.23040	.23040	
3	.34560	.34560	
4	.25920	.25920	
5	.07776	.07776	
-----			
L1(2) =			

1-Var Stats	
$\bar{x}$	=3
$\Sigma x$	=3
$\Sigma x^2$	=10.2
Sx	=
$\sigma x$	=1.095445115
$\downarrow n$	=1



Binomial Probabilities P(x)

$P(x \leq 2) = \underline{\hspace{2cm}}$ 
 $P(x < 2 \text{ or } x > 4) = \underline{\hspace{2cm}}$   
 $P(2 \leq x \leq 4) = \underline{\hspace{2cm}}$ 
 $P(x \leq 5) = \underline{\hspace{2cm}}$   
 $P(x \geq 4) = \underline{\hspace{2cm}}$ 
 $P(x > 5) = \underline{\hspace{2cm}}$



Cumulative Binomial Probabilities