

## Math 189 – Section 3.3: Tchebysheff & Empirical Rules

Consider the following data set, where  $x$  is the value of the variable and  $f$  is the frequency with which it occurs.

$x$	$f$
1	2
2	7
3	2
4	0
5	0
6	0
7	1
8	6
9	2
10	0

It has the following frequency histogram.



Here's how the data stack up using Tchebysheff and the Empirical Rule:

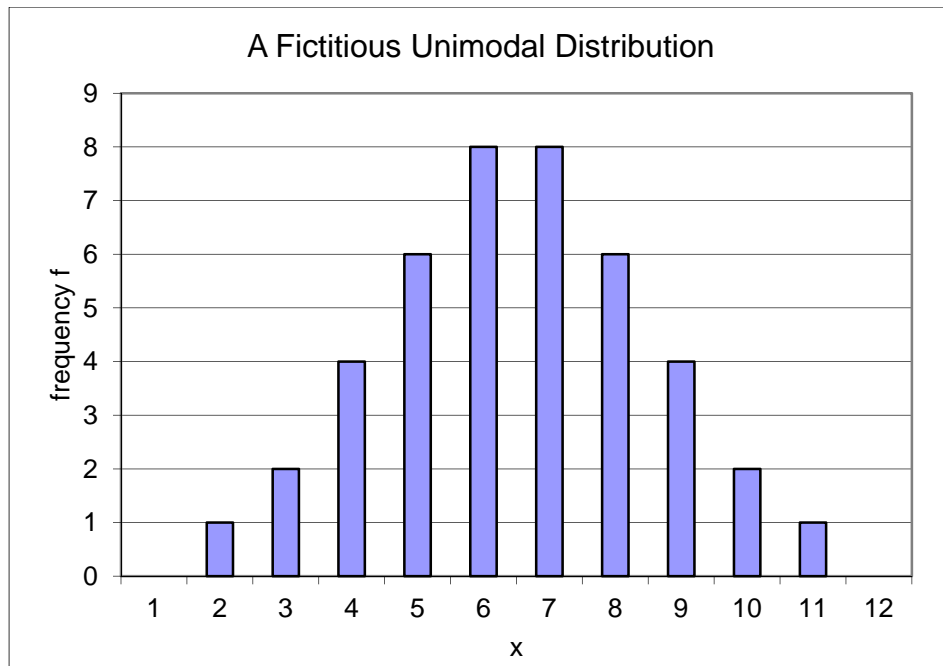
k	$x - ks$	$x + ks$	Actual number	Actual %	Tcheby %	Empirical %
1						
2						
3						

Tcheby works?	Empirical works?

Consider another data set.

x	f
1	0
2	1
3	2
4	4
5	6
6	8
7	8
8	6
9	4
10	2
11	1
12	0

It has the following histogram.



Here's how the data stack up using Tchebysheff and the Empirical Rule:

k	$x - ks$	$x + ks$	Actual number	Actual %	Tcheby %	Empirical %
1						
2						
3						

Tcheby works?	Empirical works?