


Daily Lesson Plans - Algebra 1 - Chapter 6 Friday, Sept. 11, 2009

Lesson Objectives & Standards Addressed	<p>Students will find the percent of observations falling below any value in a normal model.</p> <p>Students will compare values from different distributions using z-scores.</p>
Daily Agenda 	<ol style="list-style-type: none"> 1. Notes on Assessing normality and Normal Probability Plot 2. Go over any questions on Problems Chapter 6 <ol style="list-style-type: none"> a. Problems 4, 6, 8, 11,12, 20, 22, 25, and 28 3. Video?
Homework Assigned	<p>Chapter 6 Problems # 24, 31, 35 and worksheet</p> <p>Quiz Chapter 6 Tuesday</p> <p>Unit Test 1 – Friday Chapter 1 - 6</p>

Chapter 6 BVD- Assessing Normality

How do we know if data is normal? If a histogram of the data is “bell shaped”, then this is indicative that the data is normal.

Graph these 3 sets of data in List 1, List 2, and List 3 – use your calculator to make box and whisker plots for each and indicate the shape of each distribution.

1. 1,2,2,3,3,3,4,4,4,4,4,4,5,5,5,5,5,5,6,6,6,7,7,8
2. 1,1,1,1,1,1,2,2,2,2,2,2,2,2,3,3,3,3,3,3,4,5,7,8
3. 1,2,4,5,6,6,6,6,6,6,7,7,7,7,7,7,7,7,8,8,8,8,8,8

Next make a Normal Probability Plot on your calculator. (This is the last plot type on your calculator.) This plots data against percentiles of the standard normal distribution. If the points fall on a straight line then there is evidence that the data is normal. At this point, it suffices to judge by “eye”.

3 methods to check for normality

1. 68 – 95 – 99.7 rule – Check if the proportion of the values that fall within 1, 2, and 3 standard deviations is about 68%, 95% and 99.7% respectively.
2. Normal probability plot.
3. Look at histogram and see if it is approximately symmetric and unimodal.

This is what your calculator is doing to make a Normal Probability Plot. (for list 1)

1. $n=24$ so each occurrence is $1/24$ of the total
2. start from the left, we are going to convert each x_i position into a percent of the whole , then to a z-score.

$x_1 = 1$	$\frac{1}{24} = .04$	$\text{invnorm}(.04) \quad z = -1.75$
$x_2 = 2$	$\frac{2}{24} = .08$	$\text{invnorm}(.08) \quad z = -1.4.$
.		
.		
.		
$x_{24} = 24$	$\frac{24}{24} = 1$	$z = 3$