

## Chapter 2: Modeling Distributions Of Data

Key Vocabulary:	Calculator Skills:
density curve	randInt
mu	randNorm
sigma	normalcdf(lowerbound, upperbound,mean,std dev )
outcomes	invNorm(area,mean,std dev )
normal curve	
normal distribution	
inflection point	
68-95-99.7 rule	
percentile	
standardized value	
z-scores	
standard normal distribution	
normal probability plot	

### 2.1 Measures of Relative Standing and Density Curves (pp.84-109)

1. What is a *percentile*?
2. Is there a difference between the 80<sup>th</sup> percentile and the top 80%? Explain.
3. Is there a difference between the 80<sup>th</sup> percentile and the lower 80%? Explain.
4. What is the difference between relative frequency and cumulative relative frequency?

CYU Page 89

1.

2.

3.

4.

5. Explain how to *standardize* a variable.

6. What is the purpose of standardizing a variable?

CYU page 91

1.

2.

3.

7. What effect does standardizing the values have on the distribution?

CYU page 97

- 1.
- 2.

3.

8. What is a *density curve*?

9. What does the area under a *density curve* represent?

10. Where is the median of a *density curve* located?

11. Where is the mean of a *density curve* located?

12. Where is the mean in relation to the median on a density curve that is... (Draw a picture)  
Symmetric?

Skewed right?

Skewed left?

13. What is the difference between  $\bar{x}$  and  $\mu$ ? Between  $s_x$  and  $\sigma$ ?

CYU page 103

1.

2.

3.

4.

## **2.2 Normal Distributions (pp.110-135)**

1. How would you describe the shape of a *normal curve*? Draw several examples.

2. Where on the *normal curve* are the *inflection points* located?

3. Explain the *68-95-99.7 Rule*.

CYU page 114

1.

2.

3.

4. What is the *standard normal distribution*?

5. What information does the *standard normal table* give?

6. How do you use the standard normal table (Table A) to find the area under the standard normal curve to the left of a given *z-value*? Draw a sketch.

7. How do you use Table A to find the area under the standard normal curve to the right of a given *z-value*? Draw a sketch.

8. How do you use Table A to find the area under the standard normal curve between two given *z-values*? Draw a sketch.

9. How do you use Table A to find  $x$  when you know the percent or area under the curve?

CYU page 119 (draw all 5 normal curves with area shaded!)

CYU page 124 (draw the normal curves!)

10. Describe two methods for assessing whether or not a distribution is *approximately normal*.

11. How can you produce a *normal probability plot* on a TI 83/84+, and what should this look like if the data are *normal*?

12. What will the normal probability plot look like if the distribution is skewed?

13. What information needs to be used when using “*normalcdf*” and what result will the calculator

give?

14. What information needs to be used when using “*invNorm()*” and what result will the calculator give?