Objective: *Students will calculae z scores and make normal and standard normal density curves*

Oct 31

AP Stat

1. NOTES QUIZ: SOCRACTIVE- HKREILLY

2. Warm up pg 129-130 #2.14- compare results with neighbor

3. Compare HW pg 118-122 with neighbor

4. Recap notes

5. in class notes on Empirical Rule

6. ADD to HW: pg 130-133 #2.15,2.16,2.19 plus reg HW on syllabus

TOMORROW WILL GO OVER ALL HW from past week- will be checked

Tomorrow will be a work day.....

Notes Recap: pg 116-122

Density Curve:

- smoothe curve describing the data
- helps us to determine where particular data is relative to the set and relative to the mean- where does it fall

Standardizing- converting score to a standard score- again for distinct comparison

Z-SCORE:

- tells you how far from the mean you are
- Moves the mean to "zero" (will be detailed shortly)
- +/- tells you what side of the mean the data falls
- "how much better"
- use to compare relative standings for different distributions.

QUESTION: When would you "want" to be on the lower side of the mean (negative side)??

Percentiles:

- P percent below that observed value
- 99th percentile is really the highest

EX. If you are in the 75th percentile, you did better than 75 percent of the other people.(like inequality)

Chebyshev's Inequality- formula that helpful for skewed data

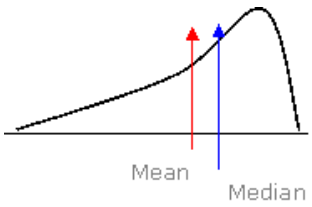
Typically anything above or below +/- 5 SD away from mean is unusual- skewed data...Normal data (symmetric) +/- 3 SD unual-more coming about that.

Density Curves:

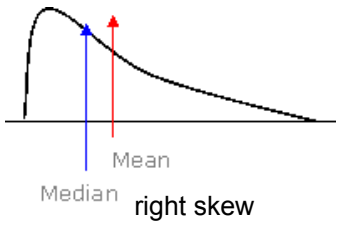
- curve= mathematical model=idealized
- easier to work with as it "ignores" minor irregularities
- TOTAL AREA under curve = 1(or 100%)
- does not actually touch the x axis

mean is balance point of density curve

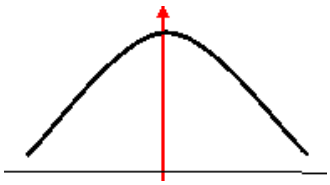
median is equal areas point



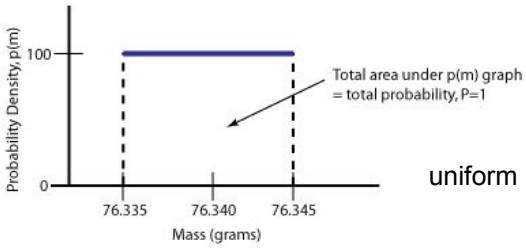
left skew



right skew



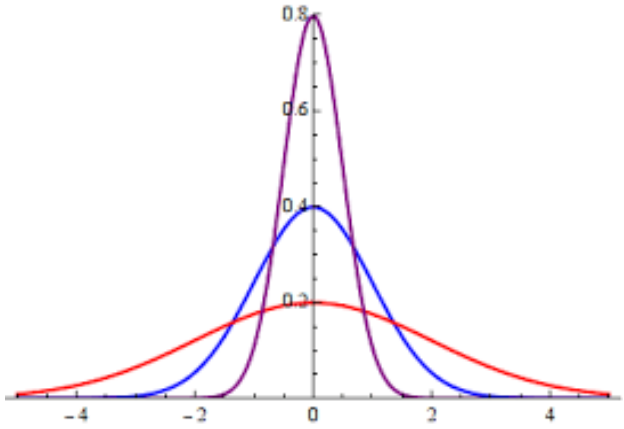
Symmetric



uniform

Compare data sets and standard deviation by looking at the density curve

Which graph has the largest standard deviation?



2.2 Normal Distributions

- Normal means special (its actually why its capitalized)
- Bell shaped

Important because:

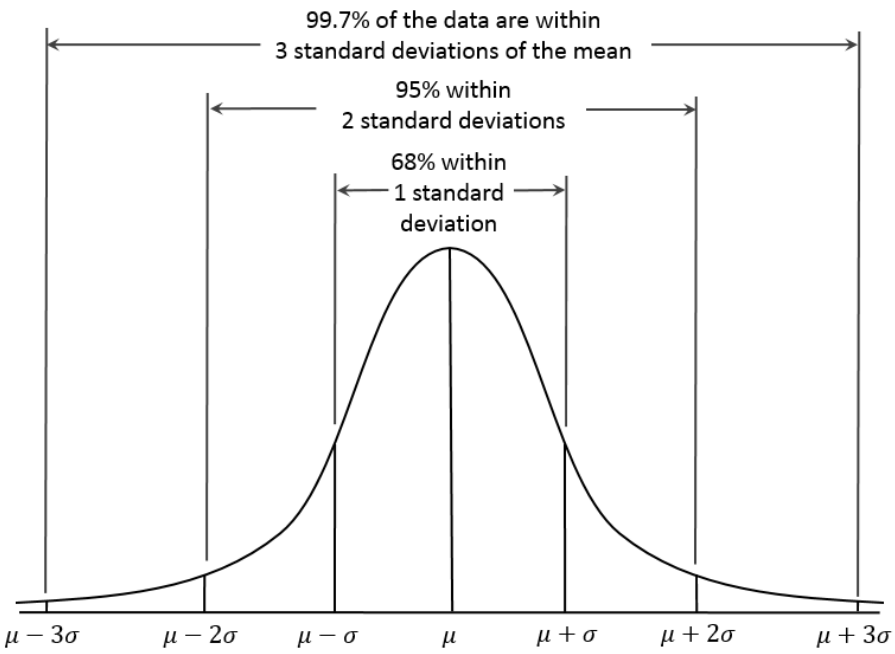
1. often good description of real data

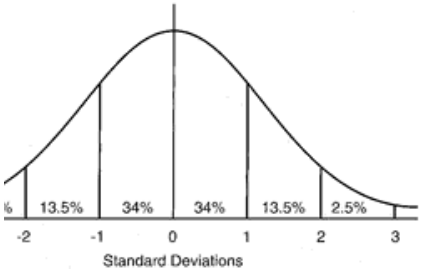
2. offers good approximations of chance outcomes

3. many statistical inference procedures are based on this curve.

The Empircal Rule: 68-95-99.7

Almost all data falls within 3 standard deviations from the mean. Beyond that would be considered unusual (maybe outlier, maybe not)





smaller breakdown:

EX: make a Normal Curve using the following data:

Test scores for a physics test had a mean of 72 and a standard deviation of 4.2.

Notation:

N(72,4.2)

Standard Normal curve- is where the z score mix in. if you starndardize all the data-

your x axis changes to this -3 -2 -1 0 +1 +2 +3

so reflect this back to the curve we just made,

72= 0 (mean)

76.2 = +1 SD 67.8= -1 SD

80.4 = +2 SD 63.6 = -2 SD

84.6 = +3 SD 59.4 = -3 SD

NOTE: add HW problems- pg 130-131 #15,16,19

Standard Normal Curve and reading the Table

- Values in the table are areas
- Values are also the proportion that corresponds to the z score.

Practice:

Find the corresponding proportion- from table

a) z<-2.46 P = .0069

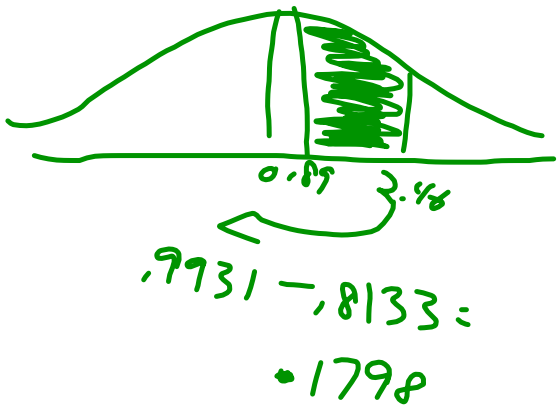
b) z > 2.46 1 − .9931 = .0069

c) 0.89 < z< 2.46

d)-2.93 < z <-1.27

e) z> -1.66

f) z > 3.7



.9931 − .8133 =
.1798

Normal Probability Plot:

- Plots the x value against its Z score. (data value on y and z score on x) (this can be reversed)
- Depending on the shape of the plot, you can tell if the data is Normal.
  - >If its close to a straight line, then the data is Normal
  - >If it is curved:
    - Skewness depends on where concentration of values are.- *see handout*

Nov. 1
AP STAT

Objective: *Students will determine if a set of data is Normal from the NPP.*

1. Warm up-handout

2. Recap notes- Normal Probability Plot

3. Compare HW with group- WG Q and A as needed

4. Handout #2 MORE PRACTICE- all of ch 2 topics

5. HW- calender problems plus finish handout.

UPCOMING CH 2 Assessment - next WEDNESDAY