Pg. 101 – list out the three things that make a density curve

• has area = exactly 1   • Is always on OR above horiz. Axis
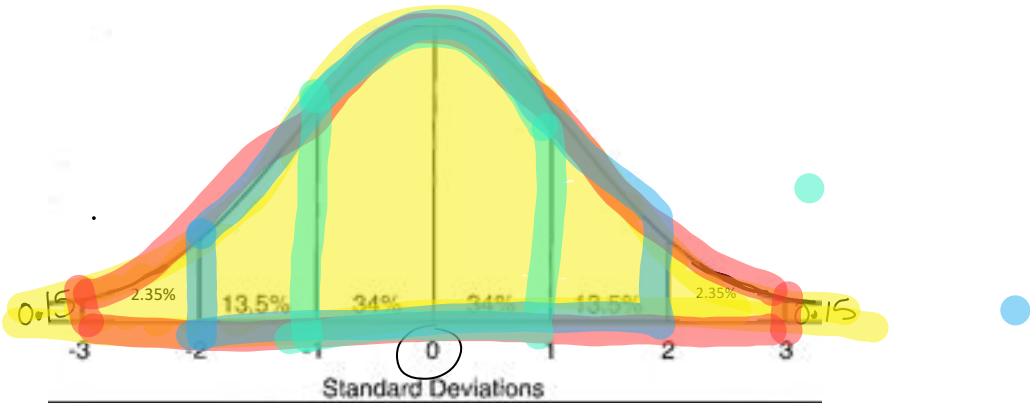   • Describes overall pattern of dist

pg. 103 – list out how to distinguish between the mean and median in a density curve

The median of a density is where
the curve split in ½ (divides area under curve in ½)
        Mean-balance point – where the curve would balance
                                    if made of solid material
What is the total area under any curve?

100%

Standard Deviations

This is a normal curve. At the ends (past 3 standard deviations) you need to WRITE IN **0.15%** on each side.
The entire curve adds up to __100__ %

- With a **yellow**, color the entire curve (end to end)
- With a **red**, color from -3σ to 3σ. Add those percentages together. What is it? __99.7%__
- With a **blue,** color from -2σ to 2σ. Add those percentages together. What is it? __95%__
- With a **green**, color from -1σ to 1σ. Add those percentages together. What is it? __68%__

You have just done the **Empirical Rule**.
Now write it clearly down here.
Between 1σ from the mean either direction __68%__ of the data lies
Between 2σ from the mean either direction __95%__ of the data lies
Between 3σ from the mean either direction __99.7%__ of the data lies
THE ENTIRE CURVE IS __100%__ !

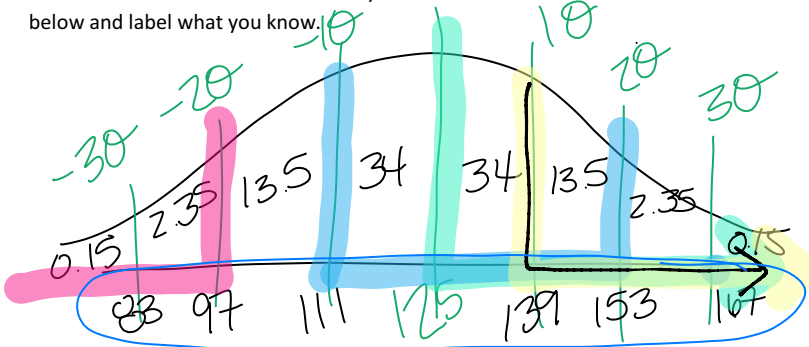What always goes down the middle of your curve?

mean

How do you count on either side of the mean? What distance are you moving?

Std. deviations

Practice with this problem. You will need to draw a curve.

The IQ scores of our class are normally distributed with a mean of 125 and a standard deviation of 14. Draw out a curve below and label what you know.

What percent of the data is above a score of 125?

50%

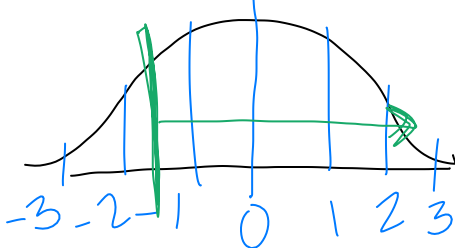What percent of data is between 111 and 153?

81.5%

What percent of the data is less than 97?

2.5%

What percent of the data is above 139?

16%

Now convert the above problem to z-scores. So the mean is 125 and the standard deviation is 14. Then draw yourself a new curve.
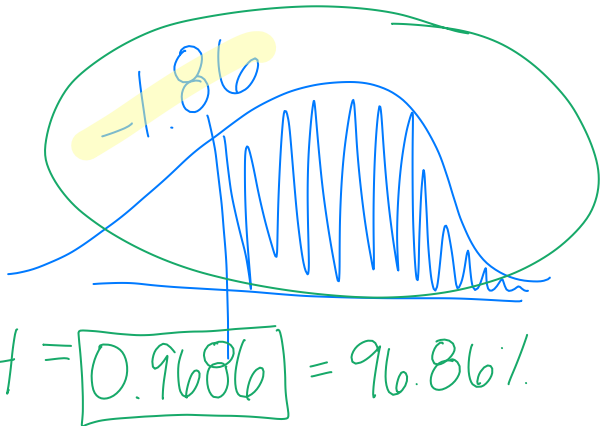

Above 99

$$\frac{99-125}{14} = -1.86$$

2nd VARS

What is the probability of finding an IQ above 0?

0.50

What is the probability of finding an IQ score below 0?

0.50

What is the probability of the entire curve?

-1.86

0.0314

$$1 - 0.0314 = \boxed{0.9686} = 96.86\%$$

5 for 5 1st

Find percentile

85th, 93rd, 51st

10	14	20	9	13
(21)	30	14	19	11

10 #s

$$\frac{85(1+10)}{100} = 9.35 \rightarrow \text{position}$$

$$21 \Rightarrow 9\text{th term}$$

(bt 9/10)

$$\frac{93(1+10)}{100} = 10.23$$

$$\boxed{30}$$

$$\frac{51(1+10)}{100} = 5.61$$

bt 5&6 = (14)