DSC 520 - 1.2 Exercise

• **Task 3:** What is the level of measurement of the following variables?

a. The number of downloads of different bands' songs on iTunes.
b. The names of the bands that were downloaded.
c. The position in the iTunes download chart.
d. The money earned by the bands from the downloads.
e. The weight of drugs bought by the bands with their royalties.
f. The type of drugs bought by the bands with their royalties.
g. The phone numbers that the bands obtained because of their fame.
h. The gender of the people giving the bands their phone numbers.
i. The instruments played by the band members.
j. The time they had spent learning to play their instruments.

Task 3:
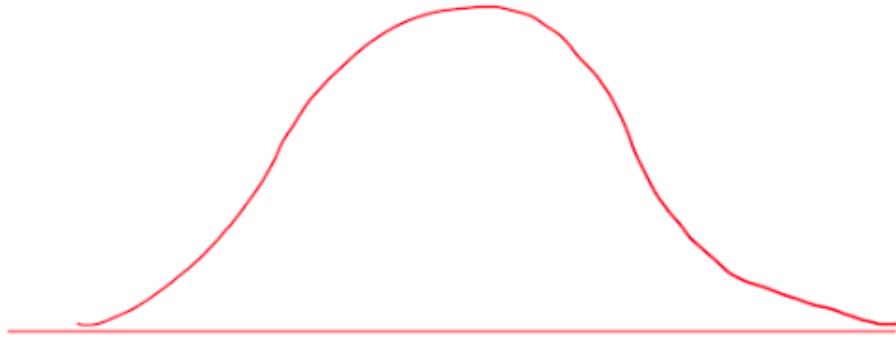a. Ratio variable. If Band A has 25 downloads and Band B has 50 downloads, Band B has twice as many downloads as Band A
b. Nominal variable. There are only names to identify which band. You can not do any arithmetic on the different band names.
c. Ordinal variable. The bands have a logical order based on the download popularity on the iTunes chart
d. Ratio variable. If Band A earns $25 from their downloads and Band B earns $50 from their downloads, Band B has earned twice as much money as Band A.
e. Ratio variable. If the weight of the drugs is 0, then that would imply that there are no drugs or the absence of drugs. That would also imply that if a band had 20 lbs and another had 10, the one band's drugs weigh twice as much as another band's.
f. Nominal variable. You can not do arithmetic on this.
g. Nominal
h. Binary
i. Nominal.
j. Interval. 0 time is not the absence time like 0 degrees is not the absence of temperature?

• **Task 4:** Say I own 857 CDs. My friend has written a computer program that uses a webcam to scan the shelves in my house where I keep my CDs and measure how many I have. His program says that I have 863 CDs. Define measurement error. What is the measurement error in my friend's CD-counting device?
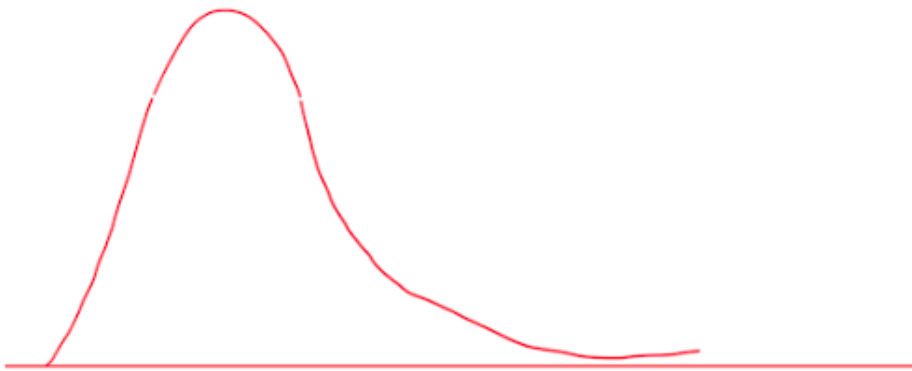
The absolute truth is that you have 857 CD's. The computer program says that you have 863 CD's. **The measurement error in the counting device is 6 CD's**, the difference between 863 (what the program counted) and 857 (the actual count).

- **Task 5:** Sketch the shape of a normal distribution, a positively skewed distribution and a negatively skewed distribution.

Normal distribution

Positively skewed distribution

Negatively skewed distribution